

**DEPAUL  
UNIVERSITY**

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## **Course Catalog**

**College of Computing and Digital Media Undergraduate  
Studies**

**Summer/Autumn 2010-2011**

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# General Information

College of Computing and Digital Media - Undergraduate Studies ▢ General Information

## Catalog Version

**UNDERGRADUATE UPDATE: APRIL 15, 2010**

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

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

# College of Computing and Digital Media (CDM)

College of Computing and Digital Media - Undergraduate Studies □ 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.

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Administration

## 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

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Student Services

## Student Services

### Assistant Dean of Student Services

LIZ FRIEDMAN, PH.D.

### Advising Staff

JOHN GLATZ  
Director of Advising

BECKY KROCHMAL  
Assistant Director of Advising

JIGBIE AGUIRRE  
Academic Advisor

SHANNON RESOWSKI  
Academic Advisor

### **Undergraduate Admissions**

SARAH PIECZYNSKI  
Director of Undergraduate Services

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Facilities

### **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

More information on Labs and Resources at CDM.

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Admission

### **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 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](#).

### **T ransfer 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.

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Academic Advisement

### **Academic Advisement**

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

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Professional Development

### **Professional Development**

The College of Computing and Digital Media established the Institute for Professional Development in 1985 to offer certificate programs designed to meet the needs of both individuals and businesses in the Chicagoland area. These non-degree offerings provide intensive training in a wide variety of areas, with each standalone certificate program

addressing a different set of theoretical concepts and practical skills. Emphasis is placed on gaining practical experience through a combination of lectures and demonstrations complemented by laboratory exercises and homework assignments. Certificate programs are typically taught by a team of instructors, that includes both full-time faculty and part-time instructors from industry. The programs require a substantial commitment of time, as most meet two nights per week and in the morning on approximately half of the Saturdays during the program.

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

Current certificate program offerings include:

**IPD 356 Web Development with Ajax Technologies Program**

A 7-week program covering Web development with Ajax technologies

**IPD 357 Wireless LAN Security Program**

An 8-week program covering the latest solutions in wireless LAN security

**IPD 358 SharePoint Developer Program**

A 10-week comprehensive program covering Microsoft SharePoint development

**IPD 359 Web Development with Python Program**

A 5-week program covering Web development with the Python programming language.

**IPD 360/460 SQL Server Business Intelligence Program**

An 11-week in-depth program covering SQL Server analysis services, integration services, and reporting services

**IPD 363 SQL Server Database Administration Program**

An 11-week in-depth program covering database administration using SQL Server

**IPD 364 Lightweight Java Web Development Program**

An 8-week comprehensive program covering open-source, lightweight Java enterprise Web development using POJOs (Plain Old Java Objects)

**IPD 365 Ruby on Rails Program**

A 8-week in-depth program covering Web development using Ruby on Rails

**IPD 366 Java Web Services Program**

A 7-week concentrated program covering service-oriented architecture and the development of Web services using Java

**IPD 370 Advanced SQL Program**

A 2-week program covering advanced Structured Query Language (SQL) features

**IPD 380 IT Project Management Program**

A 10-week comprehensive program covering best practices in IT project management

**IPD 382 Java Developer Program**

A 10-week comprehensive program covering object-oriented applications development using Java

**IPD 389 .NET Developer Program**

A 10-week comprehensive program covering .NET technologies



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

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Grades and Credit Hours Requirements

## **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.

College of Computing and Digital Media - Undergraduate Studies □ College of Computing and Digital Media (CDM) □ Minors

## **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: [godcm@cdm.depaul.edu](mailto:godcm@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, ie. NT minor would look under NT major courses and Computer Graphics Software Development would look under Computer Graphics Courses, in order to have 6 distinct courses.

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

- Security in the Electronic World
  - Software Engineering
  - Sound Design
  - Visual Computing
  - Visual Effects
- 

## CDM Minor Requirements

### Animation Minor

ANI 101	Animation for Non-Majors
or ANI 201 (not both)	Animation I
ANI 230	3D Design & Modeling
ANI 231	3D Animation
ANI 206	History of Animation
3 courses from the following list: (at least 1 must be ANI)	
DC 201	Introduction to Screenwriting
DC 210	Digital Cinema Production I
DC 220	Editing I
Any ANI course	

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### 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

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### 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

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### **Data Analysis and Data Mining Minor**

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

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### **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	

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### **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

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### **Digital Cinema Minor**

DC 205	Foundations of Cinema
DC 225	Digital Still Photography
DC 201	Introduction to Screenwriting
DC 220	Editing I

3 courses from the following list:

ANI 101	Animation for Non-Majors
DC 210	Digital Cinema Production I
DC 270	Topics in Digital Cinema
GAM 224	Introduction to Game Design
DC 215	Digital Sound Design
DC 275	Cinematography
DC 310	Digital Cinema Production II
DC 320	Editing II

**E-Commerce Technology Minor**

<b>IT 130</b>	The Internet and the Web
<b>CSC 211</b>	Prorgamming in Java I
<b>CSC 212</b>	Programming in Java II
<b>IT 230</b>	Building Internet Applications
<b>ECT 330</b>	Advanced Internet Application Development
<b>IM 210</b>	Introduction to Human-Computer Interaction

1 course from the following list:

<b>ECT 355</b>	Internet Systems: Collaboration, Commerce, and Media
<b>ECT 360</b>	Introduction to XML
<b>ECT 365</b>	Web Server Operations

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**Game Design Minor**

<b>DC 201</b>	Introduction to Screenwriting
<b>ANI 105</b>	Intro to Visual Design
<b>ANI 101</b>	Animation for Non-Majors
<b>or ANI 201</b>	Animation I
<b>ANI 230</b>	3D Design & Modeling
<b>GAM 224</b>	Introduction to Game Design
<b>or GAM 226</b>	Game Design for Majors
<b>GAM 244</b>	Game Development I
<b>GAM 245</b>	Game Development II

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**Game Programming Minor**

<b>GAM 224</b>	Introduction to Game Design
<b>or GAM 226</b>	Game Design for Majors
<b>GAM 244</b>	Game Development I
<b>GAM 245</b>	Game Development II
<b>GAM 374</b>	Action Games Programming

2 courses from the following list:

<b>ANI 230</b>	3D Design & Modeling
<b>GPH 321</b>	Computer Graphics Development I
<b>GPH 329</b>	Computer Graphics Development II
<b>GPH 350</b>	Digital Modeling II

Any other 300-Level **GAM** or **GPH** course

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

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

or IS 374 Management Support Systems  
or IT 398 Topics in Global Information Technology

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### Interactive Media Minor

#### Required Courses

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

2 courses from the following list:

IM 222 Information Visualization  
IM 208 Virtual Worlds and Online Communities  
IM 230 Scripting for Interactive Media  
IM 320 Interactive Media II  
IM 330 Advanced Scripting for Interactive Media  
IT 231 Web Development I  
IM 320 Interactive Media II

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### Information Systems Minor

IT 240 Introduction to Desktop Databases  
IT 201 Introduction to Information Systems  
IT 215 Analysis and Design Techniques  
IS 372 Fundamentals of Software Project Management  
IS 373 Introduction to Large Systems Implementation

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### Information Technology Minor

IT 130 The Internet and the Web  
IT 231 Web Development I  
IT 240 Introduction to Desktop Databases  
IT 263 Applied Networks and Security  
or TDC 261 Basic Communication Systems  
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 Minor

DC 201	Introduction to Screenwriting
DC 205	Foundations of Cinema
DC 301	Advanced Screenwriting I
DC 302	Advanced Screenwriting II
DC 303	Advanced Screenwriting III
DC 304	Topics in Screenwriting

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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++
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

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### Security in the Electronic World Minor

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

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### 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

<b>CSC 212</b>	Programming in Java II
<b>and then</b>	
<b>CSC 383</b>	Data Structures and Algorithms in Java
<b>SE 325</b>	Principles and Practices of Software Engineering
<b>SE 330</b>	Object-Oriented Modeling
<b>SE 350</b>	Object -Oriented Software Development

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### **Sound Design Minor**

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

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### **Visual Effects Minor**

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

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### **Visual Computing Minor**

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



# Programs in CDM

College of Computing and Digital Media - Undergraduate Studies ▢ 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)

College of Computing and Digital Media - Undergraduate Studies □ 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.

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □ Faculty

## Faculty

DAVID MILLER, Ph.D.  
Dean  
University of Chicago

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

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

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

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

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

ROBIN BURKE, Ph.D.  
Associate Professor  
Northwestern University

SUSY CHAN, Ph.D.  
Professor  
Syracuse University

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

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

LUCIA DETTORI, Ph.D.

Associate Professor and Associate Dean  
University of Paris XI

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

CLARK ELLIOTT, Ph.D.  
Associate Professor  
Northwestern University

HELMUT EPP, Ph.D.  
Professor  
Northwestern University

XIAOWEN FANG, Ph.D.  
Associate Professor  
Purdue University

ROBERT FISHER, Ph.D.  
Associate Professor  
Harvard University

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

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

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

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

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

RADHA JAGADEESAN, Ph.D.  
Professor  
Cornell University

XIAOPING JIA, Ph.D.  
Professor  
Northwestern University

STEVE JOST, Ph.D.  
Associate Professor  
Northwestern University

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

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

LINDA KNIGHT, Ph.D.

Associate Professor  
DePaul University

JEAN-PHILIPPE LABRUYČRE, M.S.  
Instructor  
Illinois Institute of Technology

GLENN LANCASTER, Ph.D.  
Associate Professor  
University of California, Irvine

STEPHEN LUECKING, M.F.A.  
Professor  
Miami University

EVELYN LULIS, Ph.D.  
Associate Professor  
Illinois Institute of Technology

STEVEN LYTINEN, Ph.D.  
Professor  
Yale University

WILFREDO MARRERO, Ph.D.  
Associate Professor  
Carnegie Mellon University  
JOHN MCDONALD, Ph.D.  
Associate Professor  
Northwestern University

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

DANIEL MITTLEMAN, Ph.D.  
Associate Professor  
The University of Arizona

BAMSHAD MOBASHER, Ph.D.  
Professor  
Iowa State University  
THOMAS MUSCARELLO, Ph.D.  
Associate Professor  
University of Illinois at Chicago

MAKOTO NAKAYAMA, Ph.D.  
Associate Professor  
University of California, Los Angeles

LJUBOMIR PERKOVIC, Ph.D.  
Associate Professor  
Carnegie Mellon University  
NICHOLE PINKARD, Ph.D.  
Visiting Associate Professor  
Northwestern University

CORIN PITCHER, Ph.D.  
Associate Professor  
University of Oxford

DANIELA RAICU, Ph.D.  
Associate Professor  
Oakland University

JAMES RIELY, Ph.D.  
Associate Professor  
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.  
Associate Professor  
University of Texas

RAFFAELLA SETTIMI, Ph.D.  
Associate Professor  
University of Perugia

AMBER SETTLE, Ph.D.  
Associate Professor  
University of Chicago

PAUL SISUL, M.DIV.  
Instructor  
DeAndreis Institute of Theology  
JANINE SPEARS, Ph.D.  
Assistant Professor  
The Pennsylvania State University

ADAM STEELE, Ph.D.  
Associate Professor  
Concordia University

THERESA STEINBACH, Ph.D., M.B.A.  
Assistant Professor  
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

CHARLES WILCOX, B.A.  
Instructor  
Southern Illinois University

ROSALEE WOLFE, Ph.D.  
Professor  
Indiana University

JAMES YU, Ph.D.  
Associate Professor  
Purdue University

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □ Liberal Studies Program and Modern Language Option

## Liberal Studies Program and Modern Language Option

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

Each major in the University has unique Liberal Studies requirements.

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

CDM Liberal Studies Courses

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □ CDM Liberal Studies Courses

## CDM Liberal Studies Courses

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

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

[Click to view Restrictions for CDM Students](#)

## Liberal Studies Courses Offered by CDM

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

- [Arts and Literature](#)
  - **ANI 101 Animation for Non-Majors**  
Course introduces a variety of basic animation techniques for cinema and gaming, such as hand-drawn, cutout, stop-motion and (very basic) 3D, with an emphasis on the use of computer technology.
  - **ANI 206 History of Animation**  
History of Animation: This course is an introduction to the history and development of the field of animation.

- **DC 125 Digital Still Photography for Non-Majors**  
This course is an introduction to the history and aesthetics of still photography and to the concept of photography as a descriptive and interpretive artistic medium. Students studying photographs in this context will discover relationships between individual photographers choices and their own understanding of meaning. Students will learn the fundamental concepts necessary to shoot, edit, manipulate, and print digital still photographs.
- **DC 120 Video Editing**  
Students analyze and assemble dramatic scenes under a variety of conditions and narrative strategies. Editing theories, techniques, and procedures, issues of continuity, effects, movement and sound are examined as they relate to the fundamentals of cinematic montage and visual storytelling. This class present a variety of topics and experiences that are designed to broaden the student's understanding of the art of cinematic storytelling and montage. Work on more advanced projects is integrated into the class as a means to an understanding of advanced editing tools and techniques.
- **DC 201 Introduction to Screenwriting**  
This course focuses on narrative storytelling and encourages students to find their unique voices, while emphasizing the critical importance of working as part of a creative team.
- **DC 205 Foundations of Cinema**  
Acquisition and computer representation of sound and image. Sound and video standards. Lossy and Lossless compression. Basic computer graphics and rendering. Distribution of digital information.
- **DC 222 Story Structure in Cinema**  
This course focuses on the critical analysis of narrative structure in Cinema. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.
- **DC 233 Cinema & Art**  
This course will provide an overview of avant-garde film, video, animation and installation, and the relationship of these cinematic forms to Modern and Contemporary art.
- **DC 250 Working with Actors 1**  
This course is an introduction and examination of the collaborative process between the actor and director. Methods of study include lecture, discussion, assignments, and in-class acting exercises.
- **GAM 224 Introduction to Game Design**  
Students will learn about a game's "hook", its "high concept" and the crucial needs of marketing for a successful game design. Students will also learn to design a game's component pieces.
- **GPH 211 Perceptual Principles for Digital Environments I**
- **GPH 212 Perceptual Principles for Digital Environments II**
- **GPH 213 Perceptual Principles for Digital Environments III**  
These three foundational courses in computer animation take you through the process of creating 2-D and 3-D representations on the computer. The last course teaches you how to animate them!

- Junior Experiential Learning Credit

- **CSC 298 Internship**  
Computer Science Internship in cooperation with local employers this course offers students the opportunity to integrate their academic experience with on-the-job training in computer related work areas.
- **CSC 378 Software Projects for Community Clients**
- **CSC 379 Technology Partnerships in Urban Schools**  
Students in this course will have the opportunity to assess urban community needs in the technology arena and develop skills in assisting and developing methods for bridging the digital divide that exists.
- **DC 298 Internship in Media Production/Post-Production**  
This course offers students an excellent opportunity to gain professional experience, industry contacts, and referrals while still in school. Opportunities in post-production, motion picture production, advertising, television, animation,

motion graphics and interactive media. Admission to the program requires consent of internship course instructor. Current work experience plus classroom time is required. Supervisor evaluation will contribute to the final grade.

- **DC 380 Project Bluelight**

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

- **GPH 360 Modeling Spaces**

The digital design and modeling of environmental spaces with attention to human use parameters.

- **IT 300 Research Experience**

This course involves the exploration of a research topic under the supervision of a research advisor.

- **IT 398 Topics in Global Information Technology**

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

- Scientific Inquiry

- **CSC 200 Survey of Computing**

Learn about careers using computers and pick up some skills to help you manage your own PC or network!

- **CSC 210 Introduction to Computing**

A brief history of computers and an introduction to programming.

- **CSC 211 Programming in Java I**

- **CSC 212 Programming in Java II**

Two courses in programming JAVA, a cross-platform, web-enabled language.

- **CSC 233 Codes and Ciphers**

A history of code making and breaking and the math and (computer) science behind it

- **CSC 235 Problem Solving**

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

- **CSC 239 Personal Computing**

You will learn how to use Excel to analyze data and how to publish data and retrieve it from the World Wide Web.

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

- **CSC 262 Programming Languages II: C/C++**

Two courses in programming C++

- **ECT 250 Internet, Commerce, and Society**

Ever shop online? Learn the basics behind how these kinds of web sites function

- **IM 222 Information Visualization**

This course discusses the basic problems and techniques of visualizing quantitative and qualitative data.

- **IT 130 The Internet and the Web**

Learn to design your own web site!

- **IT 236 User Interface Development**

- **IT 240 Introduction to Desktop Databases**

Learn introductory concepts in constructing databases and networking files.

- **IT 263 Applied Networks and Security**

- **TDC 361 Basic Communication Systems**

Learn about how networks work and how they impact your daily life.

- Scientific Inquiry: Lab

- **DC 274 Image, Optics and Cinematic Motion**

Cinematography is the scientifically-grounded discipline of making lighting and camera choices in order to record moving images. This course deals with the basic mathematics, physics, and photochemistry that underlie cinematography



and that motivate camera design and construction. A student who masters the foundations of cinematography through a mixture of lectures, readings, exercises, and labs will be able to evaluate and understand how motion-based recording choices affect perception of moving images they see every day.

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

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

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

- **Understanding the Past: Intercontinental/Comparative**

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

- **Philosophical Inquiry**

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

discussed.

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

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- **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
- **CSC 223 The Impact of Computing Technology On Our Lives: Self, Society, and the Modern World**  
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.
- **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**  
Acquisition and computer representation of sound and image. Sound and video standards. Lossy and Lossless compression. Basic computer graphics and rendering. Distribution of digital information.
- **DC 222 Story Structure in Cinema**  
This course focuses on the critical analysis of narrative structure in Cinema. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.
- **DC 233 Cinema & Art**  
This course will provide an overview of avant-garde film, video, animation and installation, and the relationship of these cinematic forms to Modern and Contemporary art.
- **DC 235 Adaptation: The Cinematic Recrafting of Meaning**  
This courses 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.

- **Visualization**

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

### **Restrictions for CDM Students**

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

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

### **Example 1**

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

### **Example 2**

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

### **Example 3**

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

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □ Combined Bachelor/Master Degrees

## **Combined Bachelor/Master Degrees**

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

### **Program Structure**

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

### **Admission Criteria**

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

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

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

### **Maintaining Good Standing**

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

### **Bachelor's Degree to Master's Degree Transition**

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

### **Designing a Course of Study**

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

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

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

### **Registering for Master's Degree Courses**

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

## Minors

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

### MINORS IN THE COLLEGE OF COMMERCE

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

### MINORS IN THE COLLEGE OF LIBERAL ARTS AND SCIENCES

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

### MINORS IN THE COLLEGE OF COMPUTING AND DIGITAL MEDIA

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

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

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

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

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

There are other examples too numerous to mention. So if you have questions or want advice on what minor is best for you, can email our CDM Undergraduate Services team: [godcm@cdm.depaul.edu](mailto:godcm@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, 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.

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

## CDM Minor Requirements

### Animation Minor

ANI 101	Animation for Non-Majors
or ANI 201 (not both)	Animation I
ANI 230	3D Design & Modeling
ANI 231	3D Animation
ANI 206	History of Animation
3 courses from the following list: (at least 1 must be ANI)	
DC 201	Introduction to Screenwriting
DC 210	Digital Cinema Production I
DC 220	Editing I
Any ANI course	

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### Computer Graphics Software Development Minor



## Liberal Studies

<b>GPH 211</b>	Perceptual Principles for Digital Environments I
<b>GPH 212</b>	Perceptual Principles for Digital Environments II

## Course Requirements

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

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## **Computer Science Minor**

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

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## **Data Analysis and Data Mining Minor**

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

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## **Database Minor**

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

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## **Data Visualization Development Minor**

## Liberal Studies

<b>GPH 211</b>	Perceptual Principles for Digital Environments I
<b>GPH 212</b>	Perceptual Principles for Digital Environments II

## Course Requirements

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

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## **Digital Cinema Minor**

<b>DC 205</b>	Foundations of Cinema
<b>DC 225</b>	Digital Still Photography
<b>DC 201</b>	Introduction to Screenwriting
<b>DC 220</b>	Editing I

3 courses from the following list:

<b>ANI 101</b>	Animation for Non-Majors
<b>DC 210</b>	Digital Cinema Production I
<b>DC 270</b>	Topics in Digital Cinema
<b>GAM 224</b>	Introduction to Game Design
<b>DC 215</b>	Digital Sound Design
<b>DC 275</b>	Cinematography
<b>DC 310</b>	Digital Cinema Production II
<b>DC 320</b>	Editing II
<b>DC 389</b>	The Big Picture: The Entertainment Industry

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## **E-Commerce Technology Minor**

<b>IT 130</b>	The Internet and the Web
<b>CSC 211</b>	Programming in Java I
<b>CSC 212</b>	Programming in Java II
<b>IT 230</b>	Building Internet Applications
<b>ECT 330</b>	Advanced Internet Application Development
<b>IM 210</b>	Introduction to Human-Computer Interaction

1 course from the following list:

<b>ECT 355</b>	Internet Systems: Collaboration, Commerce, and Media
<b>ECT 360</b>	Introduction to XML
<b>ECT 365</b>	Web Server Operations

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## **Game Design Minor**

<b>DC 201</b>	Introduction to Screenwriting
<b>ANI 105</b>	Intro to Visual Design
<b>ANI 101</b>	Animation for Non-Majors
<b>or ANI 201</b>	Animation I
<b>ANI 230</b>	3D Design & Modeling
<b>GAM 224</b>	Introduction to Game Design
<b>or GAM 226</b>	Game Design for Majors

<b>GAM 244</b>	Game Development I
<b>GAM 245</b>	Game Development II

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### **Game Programming Minor**

<b>GAM 224</b>	Introduction to Game Design
<b>or GAM 226</b>	Game Design for Majors
<b>GAM 244</b>	Game Development I
<b>GAM 245</b>	Game Development II
<b>GAM 374</b>	Action Games Programming

2 courses from the following list:

<b>ANI 230</b>	3D Design & Modeling
<b>GPH 321</b>	Computer Graphics Development I
<b>GPH 329</b>	Computer Graphics Development II
<b>GPH 350</b>	Digital Modeling II

Any other 300-Level **GAM** or **GPH** course

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

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

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### **Interactive Media Minor**

#### Required Courses

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

2 courses from the following list:

<b>IM 222</b>	Information Visualization
<b>IM 208</b>	Virtual Worlds and Online Communities
<b>IM 230</b>	Scripting for Interactive Media
<b>IM 320</b>	Interactive Media II
<b>IM 330</b>	Advanced Scripting for Interactive Media
<b>IT 231</b>	Web Development I
<b>IM 320</b>	Interactive Media II

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### **Information Systems Minor**

IT 240	Introduction to Desktop Databases
IT 201	Introduction to Information Systems
IT 215	Analysis and Design Techniques
IS 372	Fundamentals of Software Project Management
IS 373	Introduction to Large Systems Implementation

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### Information Technology Minor

IT 130	The Internet and the Web
IT 231	Web Development I
IT 240	Introduction to Desktop Databases
IT 263	Applied Networks and Security
or TDC 261	Basic Communication Systems
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 Minor

DC 201	Introduction to Screenwriting
DC 205	Foundations of Cinema
DC 301	Advanced Screenwriting I
DC 302	Advanced Screenwriting II
DC 303	Advanced Screenwriting III
DC 304	Topics in Screenwriting

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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++
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

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### Security in the Electronic World Minor

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

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### 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

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### Sound Design Minor

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

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### Visual Effects Minor

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

VFX 278	Digital Compositing I
VFX 378	Digital Compositing II

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### Visual Computing Minor

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

## Bachelor of Arts Degree Programs

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

### Computing (Joint with SNL)

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

#### Degree Requirements

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

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

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

#### Course Requirements

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

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

### Information Technology

The BA in Information Technology program will give students a broad education in current

areas of information technology, with a focus on producing educated and sophisticated consumers of information technology. Students in this program will gain:

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

### Online Learning Options

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

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	Required
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

**Note:** Courses offered in the student's primary major cannot be taken to fulfill LSP Domain

requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major.

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

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

### **First Year**

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

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

CSC 378        Software Projects for Community Clients (Capstone)\*  
or CSC 399       Independent Study\*  
1 Liberal Studies



4 Major Electives

5 Open Electives

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

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### **Major Electives**

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

## Bachelor of Science Degree Programs

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

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

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

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### **Concentrations**

Production and Design Concentration

Students in this concentration receive an education in all areas of game development, including game design, programming and animation, but also the basic business skills of

project management, budgeting, contract negotiation, marketing and quality assurance.

### Game Programming Concentration

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

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### Online Learning Options

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

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### 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).

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	GAM 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 courses required: - DC 201 - 2 Additional Courses
<b>Philosophical Inquiry (PI)</b>	2 Courses Required: - DC 228/IT 228 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required

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

**Effective Summer 2010, changes were made to the liberal studies domain requirements allowing**

*for more flexibility. Current students may also benefit from the less restrictive LSP domain requirements. Please note that the change is reflected in this liberal studies requirement grid.*

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

### **First Year**

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

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

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### **Major Electives**

Major electives can be chosen from the following list

**200 level ANI, DC, GAM, GPH, or IM courses**

**300 level CDM courses**

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

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### **Open Electives**

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

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## Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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### 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).

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	GAM 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 courses required: - DC 201 - ANI 101 -1 Additional Course
<b>Philosophical Inquiry (PI)</b>	2 courses required: - DC 228/IT 228 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required

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

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

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

### **First Year**

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

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

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## **Major Electives**

Major electives can be chosen from the following list

**200 level ANI, DC, GAM, GPH, or IM courses**

**300 level CDM courses**

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

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## **Open Electives**

Open Electives may be taken from any unit at DePaul. These are the only courses that may be taken under the pass/fail option. ( [Click here for details](#) ). Students must earn a grade of D

or higher in all open elective courses. Courses that satisfy a **CDM minor or other minors** are normally credited as open electives.

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## **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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

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

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

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

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## **Concentrations**

### Developer Concentration

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

### Technical Designer Concentration

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

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## **Online Learning Options**

Some courses are available for review and playback via the CDM Course Online playback system (COL) . If a course is COL-enabled, any student registered in the course has access to

the course playback. Students are strongly encouraged to utilize the COL resource wherever available. Some undergraduate courses are offered online. However, CDM currently does not offer any undergraduate program completely online. For more information on online learning at CDM visit the Online Learning page .

### Developer Concentration

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	GPH 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

## **First Year**

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

One of the following two-course sequences

### **Calculus Sequence (option 1)**

MAT 150	Calculus I
MAT 151	Calculus II

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

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

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

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

3 Liberal Studies

## **Second Year**

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

7 Liberal Studies

## **Third Year**

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

5 Liberal Studies

3 Major Electives

## **Fourth Year**

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

4 Liberal Studies

1 Major Elective

3 Open Electives

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## **Major Electives**

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

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

ANI 300	3D Character Animation
ANI 310	Motion Capture Workshop



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

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

## Open Electives

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

## Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

## Technical Designer Concentration :

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	GPH 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required: - HAA 130 - ART 106 - 1 Additional Course
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### First Year

IM 230

Scripting for Interactive Media

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

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

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## **Major Electives**

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

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

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

GPH 380	Visualization
GPH 389	Real-Time Graphics Techniques
GPH 345	Digital Surface Modeling
GPH 259	Design Geometry
GPH 329	Computer Graphics Development II
GPH 350	Digital Modeling II
GPH 360	Modeling Spaces
GPH 374	Computer Games
GPH 375	Advanced Graphics Development
IM 270	User-Centered Web Design
IM 210	Introduction to Human-Computer Interaction
IM 322	Multimedia
IM 330	Advanced Scripting for Interactive Media
or IM 336	Interactive Media Scripting for Programmers *
MAT 150	Calculus I
MAT 151	Calculus II
MAT 152	Calculus III

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

## Open Electives

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

## Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

## Computer Science

The **BS in Computer Science** at DePaul CDM provides training in the foundations of computing, data storage and information processing. With this foundation, graduates of the

program will work as application developers and software engineers who can easily adapt to and create new information technologies, new computing paradigms, and new ideas for applying computer systems. Students in the program will develop a broad set of skills and expertise:

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

## BS in Computer Science Degree Requirements

### Concentration

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

### Online Learning Options

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

## Course Requirements

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	CSC 394
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required: - CSC 208 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required

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

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

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

### **First Year**

CSC 241	Introduction to Computer Science I
CSC 242	Introduction to Computer Science II
MAT 140	Discrete Mathematics I
MAT 141	Discrete Mathematics II
CSC 224	Java for Programmers
IT 223	Data Analysis
6 Liberal Studies	

### **Second Year**

CSC 383	Data Structures and Algorithms in Java
or CSC 393	Data Structures in C++
CSC 321	Design and Analysis of Algorithms
CSC 309	Object-Oriented Programming in C++
CSC 373	Computer Systems I
CSC 374	Computer Systems II
WRD 204	Technical Writing
5 Liberal Studies	
1 Open Elective	

### **Third Year**

CSC 355	Database Systems
SE 350	Object-Oriented Software Development
CMNS 220	Public Speaking
4 Liberal Studies	
3 Major Electives	
2 Open Electives	

### **Fourth Year**

CSC 376	Distributed Systems
CSC 348	Introduction to Compiler Design
CSC 394	Software Projects (Capstone)
4 Liberal Studies	
3 Major Electives	
2 Open Electives	

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### **Major Electives**

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

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

### **Introductory Major Field Courses**

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

### **Advanced Major Field Courses**

#### **Artificial Intelligence**

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

#### **Computational Sciences**

CSC 331 Scientific Computing

#### **Computer Game Development**

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

#### **Computer Graphics**

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

## **Computer Networks**

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

## **Computer Systems**

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

## **Computer Vision**

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

## **Data Analysis and Data Mining**

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

## **Database Storage**

CSC 352	Database Programming
CSC 353	Advanced Database Concepts

## **Human-Computer Interaction**

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

## **Security**

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

## **Software Engineering**

SE 325	Introduction to Software Engineering
SE 330	Object Oriented Modeling
SE 333	Software Testing



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  
IT 320 Content Management Systems

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### Open Electives

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

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### Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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- of at least 3.850 will be graduated summa cum laude

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

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

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

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### Course Requirements

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

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<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	CSC 394
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required: - CSC 208 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required

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

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

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

### First Year

CSC 241 Introduction to Computer Science I  
 CSC 242 Introduction to Computer Science II  
 MAT 140 Discrete Mathematics I  
 MAT 141 Discrete Mathematics II  
 CSC 224 Java for Programmers  
 6 Liberal Studies  
 1 Open Elective

### Second Year

CSC 321 Design and Analysis of Algorithms  
 SE 325 Introduction to Software Engineering  
 SE 350 Object-Oriented Software Development  
 CSC 309 Object-Oriented Programming in C++  
 WRD 204 Technical Writing  
 CSC 383 Data Structures and Algorithms in Java  
 or CSC 393 Data Structures in C++

- 4 Liberal Studies
- 1 CS Major Elective
- 1 Open Elective

### **Third Year**

- IT 223                Data Analysis
- CSC 373             Computer Systems I
- CSC 374             Computer Systems II
- CSC 355             Database Systems
- CSC 360             User Interface Architecture and Development
- CMNS 220           Public Speaking
- 4 Liberal Studies
- 2 Open Electives

### **Fourth Year**

- CSC 376             Distributed Systems
- CSC 348             Introduction to Compiler Design
- CSC 394             Software Projects (Capstone)
- 5 Liberal Studies
- 1 CS Major Elective
- 2 Major Electives
- 1 Open Elective

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### **Major Electives**

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

- SE 330            Object Oriented Modeling
- SE 333            Software Testing
- SE 352            Object Oriented Enterprise Application Development
- CSC 308           Frameworks for Web Application Development
- IM 360            User-Centered Evaluation

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

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

#### **Introductory Major Field Courses**

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

## **Advanced Major Field Courses**

### **Artificial Intelligence**

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

### **Computational Sciences**

CSC 331 Scientific Computing

### **Computer Game Development**

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

### **Computer Graphics**

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

### **Computer Networks**

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

### **Computer Systems**

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

### **Computer Vision**

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

### **Data Analysis and Data Mining**

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

### **Database Storage**

CSC 352 Database Programming  
CSC 353 Advanced Database Concepts

### **Human-Computer Interaction**

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

### **Security**

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

### **Software Engineering**

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

### **Theory of Computation**

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

### **Web Development**

CSC 308 Frameworks for Web Application Development  
ECT 330 Advanced Internet Application Development  
ECT 360 Introduction to XML

ECT 365      Web Server Operations  
IT 320      Content Management Systems

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

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### Open Electives

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

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### Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □ Bachelor of Science Degree Programs □ Information Assurance and Security Engineering

### Information Assurance and Security Engineering

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

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### Online Learning Options

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

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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 BS degree in Information Assurance and Security Engineering:

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	CNS 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### **First Year**

IT 130	The Internet and the Web <a href="#">Self Placement Test</a>
IT 240	Introduction to Desktop Databases <a href="#">Self Placement Test</a>
IT 263	Applied Networks and Security
IT 231	Web Development I
CSC 233	Codes and Ciphers

MAT 140 Discrete Mathematics I  
6 Liberal Studies

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

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### **Major Electives**

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

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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



- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

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

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

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

## Information Systems

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

### Concentrations

#### Analyst

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

#### Developer

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

### Online Learning Options

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

### Analyst Concentration

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

First Year Program	
Chicago Quarter	LSP 110 or LSP 111
Focal Point	LSP 112

<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	IS 376
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### **First Year**

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

### **Second Year**

IT 215 Analysis and Design Techniques  
IT 223 Data Analysis  
IT 320 Content Management Systems  
IS 371 Introduction to IT System Management  
CMNS 212 Small Group Communications

or CMNS 220            Public Speaking  
WRD 204                Technical Writing  
or WRD 301            Writing in Workplace Contexts  
ACC 101                Introduction to Accounting I  
or MKT 301            Principles of Marketing  
or 1 Psychology course  
or 1 Management course  
5 Liberal Studies

### **Third Year**

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

### **Fourth Year**

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

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### **Major Electives**

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

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

## Developer Concentration

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	IS 376
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

## **First Year**

IT 201 Introduction to Information Systems  
IT 130 The Internet and the Web  
IT 240 Introduction to Desktop Databases  
IT 263 Applied Networks and Security  
IT 231 Web Development I  
7 Liberal Studies

## **Second Year**

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

## **Third Year**

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

## **Fourth Year**

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

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## **Major Electives**

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

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

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## **Open Electives**

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

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## **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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

## Information Technology

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

### Online Learning Options

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

### Liberal Studies

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200

<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	Required ( <b>Note:</b> Any CDM-based Capstone)
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required: - ECO 105 - 2 Additional Courses
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### First Year

IT 130 The Internet and the Web [Self Placement Test](#)  
 IT 231 Web Development I  
 IT 232 Web Development II  
 IT 240 Introduction to Desktop Databases [Self Placement Test](#)  
 IT 263 Applied Networks and Security  
 IT 330 User Interface Development for Interactive Systems  
 6 Liberal Studies

### Second Year

CSC 224 Java for Programmers [Self Placement Test](#)  
 or CSC 309 Object-Oriented Programming in C++  
 CSC 383 Data Structures and Algorithms in Java  
 or CSC 393 Data Structures in C++  
 CSC 352 Database Programming  
 IT 215 Analysis and Design Techniques [Self Placement Test](#)  
 IT 223 Data Analysis [Self Placement Test](#)  
 MAT 140 Discrete Mathematics I  
 WRD 204 Technical Writing

or WRD 301 Writing in Workplace Contexts  
5 Liberal Studies

### Third Year

CNS 340 Fundamentals of Information Assurance  
IS 372 Fundamentals of Software Project Management  
MKT 301 Principles of Marketing  
CSC 373 Computer Systems I  
or ECT 365 Web Server Operations  
or TDC 311 Computers in Telecommunications Systems  
CMNS 212 Small Group Communication  
or CMNS 220 Public Speaking  
5 Liberal Studies  
1 Major Elective

### Fourth Year

ACC 101 Introduction to Accounting I  
or FIN 290 Finance for Non-Commerce Majors  
CSC 394 Software Projects (Capstone)  
or any other CDM capstone course  
3 Liberal Studies  
3 Major Electives  
5 Open Electives

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## Major Electives

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

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

ANI 201 Animation I  
ANI 230 3D Design & 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

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## Open Electives

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

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## Degree Requirements



Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □ Bachelor of Science Degree Programs □ Interactive Media (Joint with CIM)

## Interactive Media (Joint with CIM)

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

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

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### Online Learning Options

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

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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 BS degree in Interactive Media:

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104

<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	Required
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required: - DC 205 - 2 Additional Courses
<b>Philosophical Inquiry (PI)</b>	2 Courses Required: - CSC 208 or IT 228 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required: - PSY 105 - 2 Additional Courses
<b>Understanding the Past (UP)</b>	2 Courses Required

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

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

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

### **First Year**

IT 130            The Internet and the Web  
ANI 105          Intro to Visual Design  
IM 270           User-Centered Web Design  
ART 260          Art and Design I: History, Concept, Structure  
IT 240           Introduction to Desktop Databases  
ANI 101          Animation for Non-Majors  
or ANI 201       Animation I  
6 Liberal Studies

## **Second Year**

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

## **Third Year**

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

## **Fourth Year**

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

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## **Major Electives**

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

Any of the following:

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

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

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## **Open Electives**

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

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## **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

College of Computing and Digital Media - Undergraduate Studies □ School of Computing (SoC) □ Bachelor of Science Degree Programs □ Mathematics / Computer Science (Joint with LA&S)

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

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

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

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

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

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

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

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### **Online Learning Options**

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

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## Liberal Studies

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	CSC 394 or MAT 398 or GPH 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### **First Year**

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

## 6 Liberal Studies

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

### **Calculus Sequence (option 1)**

MAT 150	Calculus I
MAT 151	Calculus II
MAT 152	Calculus III

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

MAT 160	Calculus for Mathematics and Science Majors I
MAT 161	Calculus for Mathematics and Science Majors II
MAT 162	Calculus for Mathematics and Science Majors III

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

MAT 170	Calculus I with Scientific Applications
MAT 171	Calculus II with Scientific Applications
MAT 172	Calculus III with Differential Equations

## **Second Year**

CSC 383	Data Structures and Algorithms in Java
or CSC 393	Data Structures in C++
CSC 373	Computer Systems I
CSC 374	Computer Systems II
MAT 140	Discrete Mathematics I
MAT 141	Discrete Mathematics II
MAT 260	Multivariable Calculus I
6 Liberal Studies	

## **Third Year**

MAT 262	Linear Algebra
4 Liberal Studies	
2 CDM Major Electives	
2 MAT Major Electives	
3 Open Electives	

## **Fourth Year**

CSC 321	Design and Analysis of Algorithms
CSC 394	Software Projects (Capstone)
or GPH 395	Computer Graphics Senior Project (Capstone)
or MAT 398	Senior Capstone Seminar (Capstone)
3 Liberal Studies	
1 CDM Major Elective	
1 MAT Major Elective	
1 CDM or MAT Major Elective	
4 Open Electives	

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## **Major Electives**

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

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

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

than is possible in a scheduled course.

### **Theory of Computation**

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

MAT 302	Combinatorics
MAT 303	Theory of Numbers
MAT 351	Probability and Statistics I
MAT 310	Abstract Algebra I
MAT 311	Abstract Algebra II
MAT 312	Abstract Algebra III
MAT 335	Real Analysis I
MAT 372	Logic and Set Theory
CSC 235	Problem Solving
CSC 327	Problem Solving for Contests
CSC 333	Cryptology
CSC 344	Automata Theory and Formal Grammars
CSC 347	Concepts of Programming Languages
CSC 348	Introduction to Compiler Design
CSC 387	Operations Research I: Linear Programming
or MAT 387	Operations Research I: Linear Programming
CSC 369	Introduction to Computer Graphics
CSC 389	Theory of Computation

### **Computational Methods Area**

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

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

### **Artificial Intelligence**

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

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

### **Data Analysis Area**

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

CSC 328	Data Analysis for Experimenters
CSC 334	Advanced Data Analysis
or MAT 354	Multivariate Statistics
CSC 332	Simulation and Modeling
or MAT 359	Simulation and Models and the Monte Carlo Method
CSC 367	Introduction to Data Mining
MAT 261	Multivariate Calculus II
MAT 351	Probability and Statistics I

MAT 352	Probability and Statistics II
MAT 353	Probability and Statistics III
MAT 355	Stochastic Processes
MAT 357	Nonparametric Statistics
MAT 370	Advanced Linear Algebra
MAT 356	Applied Regression Analysis
MAT 358	Applied Time Series and Forecasting

### Graphics Area

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

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

### Computer Vision Area

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

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

### Open Electives

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

### Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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



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

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

## Network Technologies

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

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

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## Online Learning Options

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

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## Concentrations

### Standard

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

### Network Security

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

### Application Development

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

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## 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):

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	TDC 376
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### **First Year**

IT 130	The Internet and the Web
IT 201	Introduction to Information Systems
IT 240	Introduction to Desktop Databases
IT 263	Applied Networks and Security
IT 231	Web Development I
MAT 140	Discrete Mathematics I
6 Liberal Studies	

## **Second Year**

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

## **Third Year**

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

## **Fourth Year**

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

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## **Major Electives**

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

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

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## **Open Electives**

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

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## **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

### 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):.

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	TDC 376
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

## **First Year**

IT 130	The Internet and the Web
IT 201	Introduction to Information Systems
IT 240	Introduction to Desktop Databases
IT 263	Applied Networks and Security
IT 231	Web Development I
MAT 140	Discrete Mathematics I
6 Liberal Studies	

## **Second Year**

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
6 Liberal Studies	

## **Third Year**

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
7 Liberal Studies	
1 Major Elective	

## **Fourth Year**

CNS 378	Host and Information Security
TDC 379	Telecommunication and Network Security Practicum
TDC 375	Network Protocols
TDC 368	Network Programming
TDC 376	Network Project (Capstone)
1 Major Elective	
6 Open Electives	

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## **Major Electives**

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

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

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## **Open Electives**

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

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## **Degree Requirements**

Students in this degree must meet the following requirements:

- complete a minimum of 192 credit hours (generally 48 courses)

- earn a grade of C- or higher in all Major courses (excluding Liberal Studies courses and Open Electives)
- maintain a cumulative GPA of 2.0 or higher

Students who earn a cumulative DePaul University GPA:

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

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

### **Application Development 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 (Application Development Concentration):

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	TDC 376
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### **First Year**

IT 130	The Internet and the Web
IT 201	Introduction to Information Systems
IT 240	Introduction to Desktop Databases
IT 263	Applied Networks and Security
IT 231	Web Development I
MAT 140	Discrete Mathematics I
6 Liberal Studies	

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

TDC 375	Network Protocols
TDC 376	Network Project (Capstone)
3 Liberal Studies	
1 Major Elective	
6 Open Electives	

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### **Major Electives**

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

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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



# School of Cinema and Interactive Media (CIM)

College of Computing and Digital Media - Undergraduate Studies □ School of Cinema and Interactive Media (CIM)

## 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.

College of Computing and Digital Media - Undergraduate Studies □ School of Cinema and Interactive Media (CIM) □ Faculty

## Faculty

LISA BARCY, M.A.  
Instructor  
Columbia College

ROBIN BURKE, Ph.D.  
Associate Professor  
Northwestern University

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

GREGG ELDER, M.A.  
Instructor  
Columbia College

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

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

DANA HODGDON, M.A.  
Associate Professor  
Northwestern University

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

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

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

EDWARD KEENAN, M.S.  
Instructor  
University of Illinois at Chicago

DANIEL KLEIN, B.F.A.  
Instructor  
New York University

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

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

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

ERNESTO PEREZ, B.F.A.  
Instructor  
University of Illinois Urbana-Champaign

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.

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

## CDM Liberal Studies Courses

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

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

[Click to view Restrictions for CDM Students](#)

## Liberal Studies Courses Offered by CDM

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

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

rendering. Distribution of digital information.

- **DC 222** *Story Structure in Cinema*  
This course focuses on the critical analysis of narrative structure in Cinema. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.
- **DC 233** *Cinema & Art*  
This course will provide an overview of avant-garde film, video, animation and installation, and the relationship of these cinematic forms to Modern and Contemporary art.
- **DC 250** *Working with Actors 1*  
This course is an introduction and examination of the collaborative process between the actor and director. Methods of study include lecture, discussion, assignments, and in-class acting exercises.
- **GAM 224** *Introduction to Game Design*  
Students will learn about a game's "hook", its "high concept" and the crucial needs of marketing for a successful game design. Students will also learn to design a game's component pieces.
- **GPH 211** *Perceptual Principles for Digital Environments I*
- **GPH 212** *Perceptual Principles for Digital Environments II*
- **GPH 213** *Perceptual Principles for Digital Environments III*  
These three foundational courses in computer animation take you through the process of creating 2-D and 3-D representations on the computer. The last course teaches you how to animate them!

- Junior Experiential Learning Credit

- **CSC 298** *Internship*  
Computer Science Internship in cooperation with local employers this course offers students the opportunity to integrate their academic experience with on-the-job training in computer related work areas.
- **CSC 378** *Software Projects for Community Clients*
- **CSC 379** *Technology Partnerships in Urban Schools*  
Students in this course will have the opportunity to assess urban community needs in the technology arena and develop skills in assisting and developing methods for bridging the digital divide that exists.
- **DC 298** *Internship in Media Production/Post-Production*  
This course offers students an excellent opportunity to gain professional experience, industry contacts, and referrals while still in school. Opportunities in post-production, motion picture production, advertising, television, animation, motion graphics and interactive media. Admission to the program requires consent of internship course instructor. Current work experience plus classroom time is required. Supervisor evaluation will contribute to the final grade.
- **DC 380** *Project Bluelight*  
Production of a feature-length digital motion picture written by students or faculty within the Digital Cinema program.
- **GPH 360** *Modeling Spaces*  
The digital design and modeling of environmental spaces with attention to human use parameters.
- **IT 300** *Research Experience*  
This course involves the exploration of a research topic under the supervision of a research advisor.
- **IT 398** *Topics in Global Information Technology*  
This course focuses on current topics in the information and communications technologies that together support the "networked world." Sample topics are global software development and deployment, global data and information management, and cross-cultural project management for information systems. The course may be offered for variable credit hours (2, 4, 8, 16, and 32).

- Scientific Inquiry

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

your own PC or network!

- **CSC 210** *Introduction to Computing*  
A brief history of computers and an introduction to programming.
- **CSC 211** *Programming in Java I*  
**CSC 212** *Programming in Java II*  
Two courses in programming JAVA, a cross-platform, web-enabled language.
- **CSC 233** *Codes and Ciphers*  
A history of code making and breaking and the math and (computer) science behind it
- **CSC 235** *Problem Solving*  
How do you solve a problem? In this course we discuss different problem solving techniques and strategies such as modeling, establishing subgoals, and searching and pruning.
- **CSC 239** *Personal Computing*  
You will learn how to use Excel to analyze data and how to publish data and retrieve it from the World Wide Web.
- **CSC 261** *Programming Languages I: C/C++*
- **CSC 262** *Programming Languages II: C/C++*  
Two courses in programming C++
- **ECT 250** *Internet, Commerce, and Society*  
Ever shop online? Learn the basics behind how these kinds of web sites function
- **IM 222** *Information Visualization*  
This course discusses the basic problems and techniques of visualizing quantitative and qualitative data.
- **IT 130** *The Internet and the Web*  
Learn to design your own web site!
- **IT 236** *User Interface Development*
- **IT 240** *Introduction to Desktop Databases*  
Learn introductory concepts in constructing databases and networking files.
- **IT 263** *Applied Networks and Security*
- **TDC 361** *Basic Communication Systems*  
Learn about how networks work and how they impact your daily life.
  
- **Scientific Inquiry: Lab**
  - **DC 274** *Image, Optics and Cinematic Motion*  
Cinematography is the scientifically-grounded discipline of making lighting and camera choices in order to record moving images. This course deals with the basic mathematics, physics, and photochemistry that underlie cinematography and that motivate camera design and construction. A student who masters the foundations of cinematography through a mixture of lectures, readings, exercises, and labs will be able to evaluate and understand how motion-based recording choices affect perception of moving images they see every day.
  - **GPH 259** *Design Geometry (cross-listed as ART 295)*  
Learn the basics of Computer Aided Design.
  
- **Self, Society, and the Modern World**
  - **CSC 223** *The Impact of Computing Technology On Our Lives*  
This course will introduce students to an overview of social analysis techniques and the theories of social change.
  - **DC 105** *Digital Media Literacies*  
This course is designed to help students develop an informed, critical and practical understanding of new communication media, including ways to read, write and produce in a digital environment.
  - **DC 235** *Adaptation: The Cinematic Recrafting of Meaning*  
This course explores contemporary cinematic adaptations of literature and how recent reworkings in film open viewers up to critical analysis of the cultural practices surrounding the promotion and reception of these narratives.
  - **IS 208** *IT, Economy and Society*  
This course broadly surveys the history of IT applications and information systems from the historical perspective, and critically assesses the digital

impact on industry, the economy, workers, citizens, social class and the future.

- **IT 201** *Introduction to Information Systems*

This course examines how various types of computer-based information systems form a critical part of modern organizations, how they work, and how they impact workers, organizations and the economy.

- **Understanding the Past: Intercontinental/Comparative**

- **GAM 206** *History of Games*

This class will examine particular games and game genres in their historical context using a case study format .

- **GPH 205** *Historical Foundations of Visual Technology*

This course is a survey of the development, application and meaning of visual technologies in a wide range of world cultures from pre-history to the present.

- **Philosophical Inquiry**

- **CSC 208** *The Computer and Social Responsibility*

This course will research the impact technology has had in various areas of our lives, the new responsibilities technology presents, and our ability to deal with these changes in an ethical manner

- **DC 227** *Film Philosophy*

This course is a seminar on the philosophical analysis of film art, with an emphasis on the ways in which it creates meaning through techniques that define a formal structure. There is a particular focus on aesthetic problems about appearance and reality, literacy and visual effects, communication and alienation through film technology.

- **DC 228 or GAM 228 or IT 228** *Ethics in Computer Games and Cinema*

Societies function based on normative ethics utilizing common sense to distinguish between ethical and unethical behavior. Most of us are not aware of the underlying theories when arriving at ethical judgments about right and wrong. However, the fast pace of progress in information technologies and digital entertainment creates an environment, in which ethical challenges are particularly complex. In the eyes of many, games and movies are violent, offensive and immoral. This course will concentrate on analyzing the impact of digital entertainment on an individual and society. Implications of certain values embedded in games and movies will be discussed. Elements of the ethical code of conduct for a game or movie creator will be formulated. The issue of balancing individual creativity vs. cultural impact, particularly on children, will be discussed.

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

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- **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
- **CSC 223** *The Impact of Computing Technology On Our Lives: Self, Society, and the Modern World*  
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.
- **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**  
Acquisition and computer representation of sound and image. Sound and video standards. Lossy and Lossless compression. Basic computer graphics and rendering. Distribution of digital information.
- **DC 222 Story Structure in Cinema**  
This course focuses on the critical analysis of narrative structure in Cinema. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.
- **DC 233 Cinema & Art**  
This course will provide an overview of avant-garde film, video, animation and installation, and the relationship of these cinematic forms to Modern and Contemporary art.
- **DC 235 Adaptation: The Cinematic Recrafting of Meaning**  
This courses 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.

- **Visualization**

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

### **Restrictions for CDM Students**

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

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

#### **Example 1**

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

#### **Example 2**

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

### **Example 3**

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

College of Computing and Digital Media - Undergraduate Studies □ School of Cinema and Interactive Media (CIM) □ Combined Bachelor/Master Degrees

## **Combined Bachelor/Master Degrees**

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

### **Program Structure**

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

### **Admission Criteria**

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

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

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

### **Maintaining Good Standing**

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

degree program, they may do so following normal CDM Admission procedures, but will still be required to take 13 graduate courses for a MS degree.

### **Bachelor's Degree to Master's Degree Transition**

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

### **Designing a Course of Study**

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

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

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

### **Registering for Master's Degree Courses**

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

College of Computing and Digital Media - Undergraduate Studies □ School of Cinema and Interactive Media (CIM) □ Minors

## **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: [godcm@cdm.depaul.edu](mailto:godcm@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, ie. NT minor would look under NT major courses and Computer Graphics Software Development would look under Computer Graphics Courses, in order to have 6 distinct courses.

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

- Screenwriting
- Security
- Security in the Electronic World
- Software Engineering
- Sound Design
- Visual Computing
- Visual Effects

## CDM Minor Requirements

### Animation Minor

ANI 101	Animation for Non-Majors
or ANI 201 (not both)	Animation I
ANI 230	3D Design & Modeling
ANI 231	3D Animation
ANI 206	History of Animation
3 courses from the following list: (at least 1 must be ANI)	
DC 201	Introduction to Screenwriting
DC 210	Digital Cinema Production I
DC 220	Editing I
Any ANI course	

### Computer Graphics Software Development Minor

#### Liberal Studies

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

#### Course Requirements

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

### Computer Science Minor

CSC 241	Introduction to Computer Science I
and CSC 242	Introduction to Computer Science II
and CSC 224	Java for Programmers
or	
CSC 211	Programming in Java I
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

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### Data Analysis and Data Mining Minor

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

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### 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	

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### 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

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### 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

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### **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

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### **Game Design Minor**

DC 201	Introduction to Screenwriting
ANI 105	Intro to Visual Design
ANI 101	Animation for Non-Majors
or ANI 201	Animation I
ANI 230	3D Design & Modeling
GAM 224	Introduction to Game Design
or GAM 226	Game Design for Majors
GAM 244	Game Development I
GAM 245	Game Development II

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### **Game Programming Minor**

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

2 courses from the following list:

ANI 230	3D Design & Modeling
GPH 321	Computer Graphics Development I
GPH 329	Computer Graphics Development II
GPH 350	Digital Modeling II

Any other 300-Level **GAM** or **GPH** course

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

ECT 350	Internet, Commerce and Society
HCI 201	Multimedia and the World Wide Web
IT 201	Introduction to Information Systems
IT 215	Analysis and Design Techniques
CSC 223	The Impact of Computing Technology on Our Lives
or IT 228	Ethics in Computer Games and Cinema
or CSC 208	The Computer and Social Responsibility

or IS 208	Information Technology, Economy and Society
IS 356	Knowledge Management Systems
or IS 374	Management Support Systems
or IT 398	Topics in Global Information Technology

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### Interactive Media Minor

#### Required Courses

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

2 courses from the following list:

IM 222	Information Visualization
IM 208	Virtual Worlds and Online Communities
IM 230	Scripting for Interactive Media
IM 320	Interactive Media II
IM 330	Advanced Scripting for Interactive Media
IT 231	Web Development I
IM 320	Interactive Media II

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### Information Systems Minor

IT 240	Introduction to Desktop Databases
IT 201	Introduction to Information Systems
IT 215	Analysis and Design Techniques
IS 372	Fundamentals of Software Project Management
IS 373	Introduction to Large Systems Implementation

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### Information Technology Minor

IT 130	The Internet and the Web
IT 231	Web Development I
IT 240	Introduction to Desktop Databases
IT 263	Applied Networks and Security
or TDC 261	Basic Communication Systems
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



**Screenwriting Minor**

DC 201	Introduction to Screenwriting
DC 205	Foundations of Cinema
DC 301	Advanced Screenwriting I
DC 302	Advanced Screenwriting II
DC 303	Advanced Screenwriting III
DC 304	Topics in Screenwriting

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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++
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

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**Security in the Electronic World Minor**

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

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**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

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### Sound Design Minor

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

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### Visual Effects Minor

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

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### Visual Computing Minor

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

## Bachelor of Arts Degree Programs

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

### Animation

The **BA in Animation** emphasizes solid traditional animation and storytelling skills, while

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

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

### Online Learning Options

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

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	LSP 120 & LSP 121 ( <b>Note</b> : This proficiency can be met through exams at <a href="#">QRC</a> . Please see QRC note below for more information.)
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	ANI 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required: - ART 106 - DC 233 or ART 200 -1 Additional Course
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required

<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Note</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL/MGT 248 (PI) or REL/MGT 228 (RD)

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

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

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

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

### **First Year**

ANI 105 Intro to Visual Design  
ANI 201 \* Animation I  
ANI 206 History of Animation  
DC 201 Introduction to Screenwriting  
DC 220 Editing I  
ART 218 Figure Drawing

\* ANI 101 allowed for transfer students

6 Liberal Studies

### **Second Year**

ANI 220 Storyboarding and Narrative Development  
ANI 230 3D Design & Modeling  
ANI 231 3D Animation  
ANI 320 Hand-Drawn Animation  
DC 210 Digital Cinema Production I  
ANI 318 Advanced Figure Drawing

6 Liberal Studies

### **Third Year**

ANI 240 Animation Production I  
ANI 340 Animation Production II  
IM 220 Interactive Media I  
DC 215 Digital Sound Design  
MCS 207 History of Cinema I, 1890-1945  
or MCS 208 History of Cinema II, 1945-1975  
or MCS 209 History of Cinema III, 1975-Present

3 Liberal Studies

2 Major Electives

2 Open Electives

## **Fourth Year**

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

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### **Major Electives**

Major electives can be chosen from the following list

**Any ANI,ART,DC,GAM,GPH, IM, TV or VFX course EXCEPT: ART 102, ART 104, ART 105, DC 120 or GPH 211.**

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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

### **Digital Cinema**

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

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

- The Cinema Production Concentration features a hands-on program in live-action production. With its greater number of electives, students may also develop an

interdisciplinary program of study in cinema history and theory.

- The Screenwriting Concentration features a program of study in advanced screenwriting in addition to core courses in cinema production, dramatic literature and cinema history/theory.
- The Television Production Concentration features a hands-on experience with cutting edge digital equipment in studio and field production for video and television. Students apply theoretical concepts while planning and designing programs, capturing, editing (linear and non-linear) and post-production.

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

### Online Learning Options

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

### Cinema Production Concentration

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	LSP 120 & LSP 121 <i>Note : This proficiency can be met through exams at <a href="#">QRC</a> . Please see QRC note below for more information.</i>
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	DC 398
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required

**Other**

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

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

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

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

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

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

**Second Year**

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

**Third Year**

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

**Fourth Year**

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

DC 398      Digital Cinema Capstone

5 Liberal Studies

1 Major Elective

3 Open Electives

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### Major Electives

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

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### Open Electives

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

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### Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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### 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):

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	LSP 120 & LSP 121 <i>Note : This proficiency can be met through exams at <a href="#">QRC</a>. Please see QRC note below for more information.</i>
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	



<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	DC 398
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

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

### **First Year**

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

### **Second Year**

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

### **Third Year**

DC 301      Advanced Screenwriting I  
DC 302      Advanced Screenwriting II  
DC 303      Advanced Screenwriting III  
DC 306      Writing the Sitcom  
DC 235      Adaptation: The Cinematic Recrafting of Meaning  
5 Liberal Studies  
1 Major Elective  
1 Open Elective

### **Fourth Year**

DC 307      Writing the Episodic Drama  
DC 304      Topics in Screenwriting  
DC 389      The Big Picture: The Entertainment Industry  
DC 398      Digital Cinema Capstone  
4 Liberal Studies  
1 Major Elective  
3 Open Electives

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### **Major Electives**

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

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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### **Television Production Concentration**

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

concentration): .

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	LSP 120 & LSP 121 <i>Note : This proficiency can be met through exams at <a href="#">QRC</a>. Please see QRC note below for more information.</i>
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	DC 398
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

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

### **First Year**

DC 110 Foundations of Cinema for Majors  
DC 101 Screenwriting for Majors  
DC 220 Editing I  
DC 215 Digital Sound Design  
DC 225 Digital Still Photography  
6 Liberal Studies  
1 Open Elective

### **Second Year**

ANI 260 Motion Graphics  
DC 275 Cinematography  
DC 271 Introduction to Television Production  
DC 272 Writing for Television  
DC 376 Visual Design  
VFX 278 Digital Compositing I  
5 Liberal Studies  
1 Major Elective

### **Third Year**

TV 289 The Business of Television  
TV 320 Editing for Television  
TV 301 Television Program Development  
DC 323 Pre-production in Cinema  
DC 371 Documentary Production  
4 Liberal Studies  
3 Open Elective

### **Fourth Year**

DC 372 Topics in TV Production  
DC 373 Advanced Documentary Production  
DC 378 Digital Compositing II  
DC 398 Digital Cinema Capstone  
5 Liberal Studies  
3 Open Electives

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### **Major Electives**

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

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

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### **Open Electives**

Open Electives may be taken from any unit at DePaul. It is suggested that students include the following courses in their electives:

- JOUR 276 Photojournalism
- JOUR 365 Television News
- JOUR 385 Television News II

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

## Bachelor of Science Degree Programs

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

### Animation

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

### Online Learning Options

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

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112

<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	LSP 120 & LSP 121 ( <b>Note</b> : This proficiency can be met through exams at <a href="#">QRC</a> . Please see QRC note below for more information.)
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	ANI 395 or GAM 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required: - ART 106 - DC 233 or ART 200 - 1 Additional Course ( <b>Note</b> : GAM 224 recommended)
<b>Philosophical Inquiry (PI)</b>	2 Courses Required ( <i>See note below</i> )
<b>Religious Dimensions (RD)</b>	2 Courses Required ( <i>See note below</i> )
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are DC/GAM/IT 228 (PI), PHL/MGT 248 (PI) or REL/MGT 228 (RD)

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

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

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

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

### **First Year**

ANI 105	Intro to Visual Design
ANI 201 *	Animation I
ANI 206	History of Animation
ANI 230	3D Design & Modeling

DC 201 Introduction to Screenwriting

ART 218 Figure Drawing

\* ANI 101 allowed for transfer students

6 Liberal Studies

### **Second Year**

ANI 220 Storyboarding and Narrative Development

ANI 231 3D Animation

ANI 300 3D Character Animation

DC 220 Editing I

ART 318 Advanced Figure Drawing

or ART 317 Figure Sculpture

GAM 244 Game Development I

6 Liberal Studies

### **Third Year**

ANI 240 Animation Production I

ANI 340 Animation Production II

ANI 330 3D Character Modeling

ANI 339 3D Texturing and Lighting

DC 210 Digital Cinema Production I

GAM 341 Introduction to Level Design

3 Liberal Studies

2 Major Electives

1 Open Elective

### **Fourth Year**

MCS 207 History of Cinema I, 1890-1945

or MCS 208 History of Cinema II, 1945-1975

or MCS 209 History of Cinema III, 1975-Present

GPH 355 3D Scripting for Animators

ANI 394 \* Animation Project I

ANI 395 \* Animation Project II

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

5 Liberal Studies

1 Major Elective

2 Open Electives

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### **Major Electives**

Major electives can be chosen from the following list

**Any ANI,ART,DC,GAM,GPH, IM, TV or VFX course EXCEPT: ART 102,ART 104,ART 105,DC 120 or GPH 211.**

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude

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

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

College of Computing and Digital Media - Undergraduate Studies □ School of Cinema and Interactive Media (CIM) □ Bachelor of Science Degree Programs □ Computer Games Development (Joint with SoC)

## Computer Games Development (Joint with SoC)

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

### Concentrations

#### Production and Design Concentration

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

#### Game Programming Concentration

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

### Online Learning Options

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

### Production & Design Concentration

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111



<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	GAM 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 courses required: - DC 201 - 2 Additional Courses
<b>Philosophical Inquiry (PI)</b>	2 Courses Required: - DC 228/IT 228 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required

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

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

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

### **First Year**

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

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

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### **Major Electives**

Major electives can be chosen from the following list

**200 level ANI, DC, GAM, GPH, or IM courses**

**300 level CDM courses**

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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### **Game Programming Concentration**

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

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<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	GAM 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 courses required: - DC 201 - ANI 101 -1 Additional Course
<b>Philosophical Inquiry (PI)</b>	2 courses required: - DC 228/IT 228 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required

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

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

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

### **First Year**

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

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

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### **Major Electives**

Major electives can be chosen from the following list

**200 level ANI, DC, GAM, GPH, or IM courses**

**300 level CDM courses**

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

## Computer Graphics and Motion Technology (Joint with SoC)

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

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

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### Concentrations

#### Developer Concentration

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

#### Technical Designer Concentration

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

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### Online Learning Options

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

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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):

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	LSP 200

<b>US</b>	
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	GPH 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### **First Year**

CSC 261      Programming Languages I: C/C++  
CSC 262      Programming Languages II: C/C++  
CSC 393      Data Structures in C++  
GPH 211      Perceptual Principles for Digital Environments I  
GPH 212      Perceptual Principles for Digital Environments II  
ANI 201      Animation I  
MAT 140      Discrete Mathematics I  
One of the following two-course sequences

#### **Calculus Sequence (option 1)**

MAT 150      Calculus I  
MAT 151      Calculus II

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

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

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

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

3 Liberal Studies

### **Second Year**

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

### **Third Year**

GPH 372	Principles of Computer Animation
CSC 321	Design and Analysis of Algorithms
IM 315	Theory and Perception of Color
WRD 204	Technical Writing
5 Liberal Studies	
3 Major Electives	

### **Fourth Year**

GPH 375	Advanced Graphics Development
GPH 388	Production Pipeline Techniques
GPH 389	Real-Time Graphics Techniques
GPH 395	Computer Graphics Senior Project (Capstone)
4 Liberal Studies	
1 Major Elective	
3 Open Electives	

### **Major Electives**

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

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

ANI 300	3D Character Animation
ANI 310	Motion Capture Workshop
ART 225	Beginning Photography
ART 329	Advanced Digital Photography
ART 360	Illustration
ART 373	History of Design
IT 223	Data Analysis <a href="#">Self Placement Test</a>
IT 236	User Interface Development
GPH 336	Smooth Surface Modeling for Graphics and Animation
GPH 340	Procedural Shading
GPH 341	Advanced Lighting Techniques
GPH 348	Rigging for Animation
GPH 376	Artificial Intelligence in Computer Games
GPH 380	Visualization
GPH 389	Real-Time Graphics Techniques
GPH 345	Digital Surface Modeling
GPH 259	Design Geometry
GPH 329	Computer Graphics Development II
GPH 350	Digital Modeling II
GPH 360	Modeling Spaces
GPH 374	Computer Games
GPH 375	Advanced Graphics Development
IM 270	User-Centered Web Design

IM 210	Introduction to Human-Computer Interaction
IM 322	Multimedia
IM 330	Advanced Scripting for Interactive Media
or IM 336	Interactive Media Scripting for Programmers *
MAT 150	Calculus I
MAT 151	Calculus II
MAT 152	Calculus III

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

### Open Electives

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

### Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

### Technical Designer Concentration :

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required



<b>Senior Year</b>	
<b>Capstone</b>	GPH 395
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required: - HAA 130 - ART 106 - 1 Additional Course
<b>Philosophical Inquiry (PI)</b>	2 Courses Required (See note below)
<b>Religious Dimensions (RD)</b>	2 Courses Required (See note below)
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course: Recommended choices are CSC 208 (PI), PHL 248/MGT 248 (PI) or REL 228/MGT 228 (RD)

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

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

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

### **First Year**

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

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

### **Major Electives**

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

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

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

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

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## Open Electives

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

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## Degree Requirements

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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

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

## Digital Cinema

The **BS in Digital Cinema** at DePaul CDM is an innovative program that seeks to define and to develop the evolving relationship between cinema production technologies and creative artistic expression. The intensive technical emphasis of the Bachelor of Science degree prepares students for work in live-action special effects, 3-D animation, and game development. Students receive hands-on experience with the latest production equipment in the first year and get an insider's view of the industry from experienced faculty. Students in this program will gain practical production experience through classes, internships and the Project Bluelight program working under a group of professionals in a full-length feature film, or working in an all-student independent short productions.

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## Online Learning Options

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

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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 BS degree in Digital Cinema:

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	LSP 120 & LSP 121 <i>Note : This proficiency can be met through exams at <a href="#">QRC</a> . Please see QRC note below for more information.</i>
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required
<b>Senior Year</b>	
<b>Capstone</b>	DC 398
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required: - 2 Courses Chosen from MCS 207, MCS 208, MCS 209, ANI 206 - 1 Additional Course
<b>Philosophical Inquiry (PI)</b>	2 Courses Required <i>(See note below)</i>
<b>Religious Dimensions (RD)</b>	2 Courses Required <i>(See note below)</i>
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required
<b>Understanding the Past (UP)</b>	2 Courses Required
<b>Other</b>	1 of the PI or RD courses must be an ethics course. Recommended choices are DC/GAM/IT 228 (PI), PHL 248/MGT 248 (PI) or REL228/MGT 228 (RD)

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

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

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

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

### **First Year**

ANI 105	Intro to Visual Design
DC 101	Screenwriting for Majors
DC 110	Foundation of Cinema for Majors

DC 225                Digital Still Photography  
DC 220                Editing I  
6 Liberal Studies  
1 Open Elective

### **Second Year**

ANI 201                Animation I  
VFX 200                Introduction to Visual Effects  
DC 215                Digital Sound Design  
ANI 230                3D Design & Modeling  
DC 275                Cinematography  
DC 210                Digital Cinema Production I  
DC 222                Story Structure in Cinema  
5 Liberal Studies

### **Third Year**

VFX 278                Digital Compositing I  
DC 315                Advanced Sound Design  
ANI 260                Motion Graphics  
ANI 231                3D Animation  
DC 375                Advanced Cinematography  
DC 310                Digital Cinema Production II  
5 Liberal Studies  
1 Open Elective

### **Fourth Year**

VFX 378                Digital Compositing II  
DC 320                Editing II  
DC 325                Color Correction  
ANI 310                Motion Capture Workshop  
DC 398                Digital Cinema Capstone  
4 Liberal Studies  
3 Open Elective

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### **Major Electives**

No major elective is required

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

- between 3.500 and 3.699 will be graduated cum laude

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

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

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

## Interactive Media (Joint with SoC)

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

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

### Online Learning Options

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

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

<b>First Year Program</b>	
<b>Chicago Quarter</b>	LSP 110 or LSP 111
<b>Focal Point</b>	LSP 112
<b>Writing</b>	WRD 103 and WRD 104
<b>Quantitative Reasoning &amp; Technological Literacy</b>	Not Required
<b>Sophomore Year</b>	
<b>Multiculturalism in the US</b>	LSP 200
<b>Junior Year</b>	
<b>Experiential Learning</b>	Required

<b>Senior Year</b>	
<b>Capstone</b>	Required
<b>Learning Domains</b>	
<b>Arts and Literature (AL)</b>	3 Courses Required: - DC 205 - 2 Additional Courses
<b>Philosophical Inquiry (PI)</b>	2 Courses Required: - CSC 208 <b>or</b> IT 228 - 1 Additional Course
<b>Religious Dimensions (RD)</b>	2 Courses Required
<b>Scientific Inquiry (SI)</b>	1 SI Lab Course Required
<b>Self, Society and the Modern World (SSMW)</b>	3 Courses Required: - PSY 105 - 2 Additional Courses
<b>Understanding the Past (UP)</b>	2 Courses Required

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

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

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

### **First Year**

IT 130            The Internet and the Web  
ANI 105           Intro to Visual Design  
IM 270            User-Centered Web Design  
ART 260           Art and Design I: History, Concept, Structure  
IT 240            Introduction to Desktop Databases  
ANI 101           Animation for Non-Majors  
**or** ANI 201       Animation I  
6 Liberal Studies

### **Second Year**

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

### **Third Year**

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

### **Fourth Year**

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

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### **Major Electives**

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

Any of the following:

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

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

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### **Open Electives**

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

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### **Degree Requirements**

Students in this degree must meet the following requirements:

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

Students who earn a cumulative DePaul University GPA:

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

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





# 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: [godm@cdm.depaul.edu](mailto:godm@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, ie. NT minor would look under NT major courses and Computer Graphics Software Development would look under Computer Graphics Courses, in order to have 6 distinct courses.

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

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### **CDM Minor Requirements**

#### **Animation Minor**

**ANI 101** Animation for Non-Majors

**or ANI 201 (not both)** Animation I

**ANI 230** 3D Design & Modeling

**ANI 231** 3D Animation

**ANI 206** History of Animation

3 courses from the following list: (at least 1 must be ANI)

**DC 201** Introduction to Screenwriting

**DC 210** Digital Cinema Production I

**DC 220** Editing I

**Any ANI course**

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## Computer Graphics Software Development Minor

### Liberal Studies

<b>GPH 211</b>	Perceptual Principles for Digital Environments I
<b>GPH 212</b>	Perceptual Principles for Digital Environments II

### Course Requirements

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

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## Computer Science Minor

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

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## Data Analysis and Data Mining Minor

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

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## Database Minor

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

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## Data Visualization Development Minor

### Liberal Studies

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

### Course Requirements

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

## Digital Cinema Minor

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

3 courses from the following list:

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

## E-Commerce Technology Minor

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

1 course from the following list:

- ECT 355** Internet Systems: Collaboration, Commerce, and Media  
**ECT 360** Introduction to XML  
**ECT 365** Web Server Operations
- 

## Game Design Minor

- DC 201** Introduction to Screenwriting  
**ANI 105** Intro to Visual Design  
**ANI 101** Animation for Non-Majors  
**or ANI 201** Animation I

<b>ANI 230</b>	3D Design & Modeling
<b>GAM 224</b>	Introduction to Game Design
<b>or GAM 226</b>	Game Design for Majors
<b>GAM 244</b>	Game Development I
<b>GAM 245</b>	Game Development II

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### **Game Programming Minor**

<b>GAM 224</b>	Introduction to Game Design
<b>or GAM 226</b>	Game Design for Majors
<b>GAM 244</b>	Game Development I
<b>GAM 245</b>	Game Development II
<b>GAM 374</b>	Action Games Programming

2 courses from the following list:

<b>ANI 230</b>	3D Design & Modeling
<b>GPH 321</b>	Computer Graphics Development I
<b>GPH 329</b>	Computer Graphics Development II
<b>GPH 350</b>	Digital Modeling II

Any other 300-Level **GAM** or **GPH** course

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

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

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### **Interactive Media Minor**

#### Required Courses

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

2 courses from the following list:

<b>IM 222</b>	Information Visualization
<b>IM 208</b>	Virtual Worlds and Online Communities
<b>IM 230</b>	Scripting for Interactive Media
<b>IM 320</b>	Interactive Media II
<b>IM 330</b>	Advanced Scripting for Interactive Media
<b>IT 231</b>	Web Development I
<b>IM 320</b>	Interactive Media II

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## Information Systems Minor

IT 240	Introduction to Desktop Databases
IT 201	Introduction to Information Systems
IT 215	Analysis and Design Techniques
IS 372	Fundamentals of Software Project Management
IS 373	Introduction to Large Systems Implementation

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## Information Technology Minor

IT 130	The Internet and the Web
IT 231	Web Development I
IT 240	Introduction to Desktop Databases
IT 263	Applied Networks and Security
or TDC 261	Basic Communication Systems
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 Minor

DC 201	Introduction to Screenwriting
DC 205	Foundations of Cinema
DC 301	Advanced Screenwriting I
DC 302	Advanced Screenwriting II
DC 303	Advanced Screenwriting III
DC 304	Topics in Screenwriting

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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++
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

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## Security in the Electronic World Minor

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

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## 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

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## Sound Design Minor

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

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## Visual Effects Minor

ANI 230	3D Design & Modeling
ANI 379	Advanced 3D Compositing



DC 220	Editing I
DC 325	Color Correction
VFX 200	Introduction to Visual Effects
VFX 278	Digital Compositing I
VFX 378	Digital Compositing II

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### Visual Computing Minor

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

College of Computing and Digital Media - Undergraduate Studies □ Special Programs □ Professional Development

### Professional Development

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

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

Current certificate program offerings include:

#### **IPD 356 Web Development with Ajax Technologies Program**

A 7-week program covering Web development with Ajax technologies

#### **IPD 357 Wireless LAN Security Program**

An 8-week program covering the latest solutions in wireless LAN security

#### **IPD 358 SharePoint Developer Program**

A 10-week comprehensive program covering Microsoft SharePoint development

#### **IPD 359 Web Development with Python Program**

A 5-week program covering Web development with the Python programming language.

#### **IPD 360/460 SQL Server Business Intelligence Program**

An 11-week in-depth program covering SQL Server analysis services, integration services, and reporting services

#### **IPD 363 SQL Server Database Administration Program**

An 11-week in-depth program covering database administration using SQL Server

### **IPD 364 Lightweight Java Web Development Program**

An 8-week comprehensive program covering open-source, lightweight Java enterprise Web development using POJOs (Plain Old Java Objects)

### **IPD 365 Ruby on Rails Program**

A 8-week in-depth program covering Web development using Ruby on Rails

### **IPD 366 Java Web Services Program**

A 7-week concentrated program covering service-oriented architecture and the development of Web services using Java

### **IPD 370 Advanced SQL Program**

A 2-week program covering advanced Structured Query Language (SQL) features

### **IPD 380 IT Project Management Program**

A 10-week comprehensive program covering best practices in IT project management

### **IPD 382 Java Developer Program**

A 10-week comprehensive program covering object-oriented applications development using Java

### **IPD 389 .NET Developer Program**

A 10-week comprehensive program covering .NET technologies

College of Computing and Digital Media - Undergraduate Studies □ Special Programs □ Combined Bachelor/Master Degrees

## **Combined Bachelor/Master Degrees**

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

### **Program Structure**

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

### **Admission Criteria**

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

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

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

### **Maintaining Good Standing**

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

### **Bachelor's Degree to Master's Degree Transition**

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

### **Designing a Course of Study**

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

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

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

### **Registering for Master's Degree Courses**

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

# Courses

College of Computing and Digital Media - Undergraduate Studies ▢ Courses

## **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.