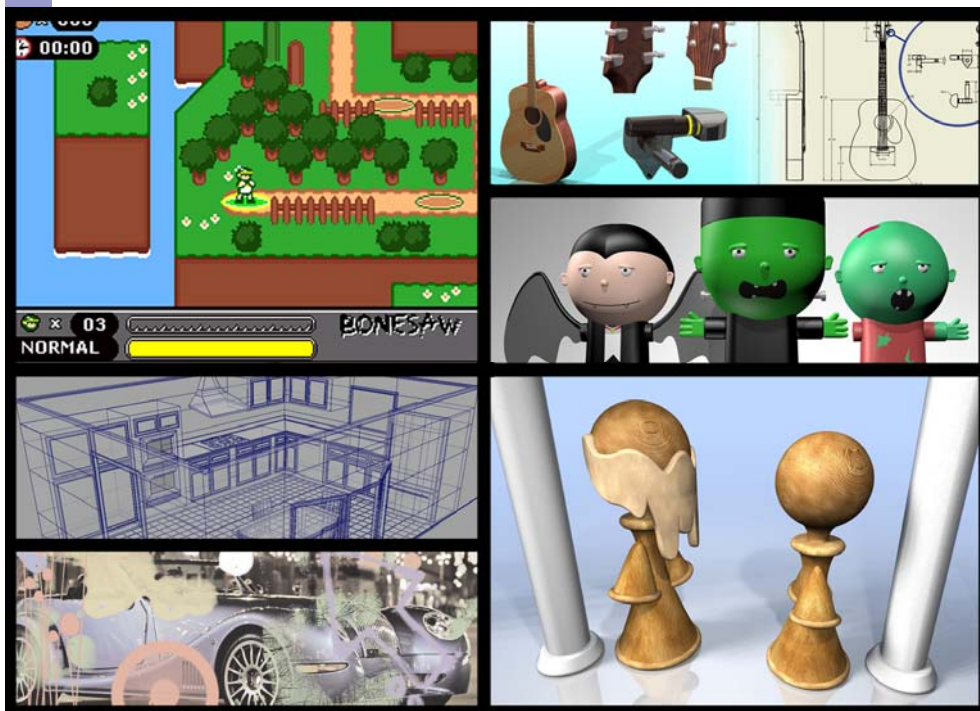


DIGITAL ARTS & SCIENCES



Student Handbook
(Class of 2012 and beyond)

Clarkson
UNIVERSITY
defy convention™

October 2008

Digital Arts & Sciences
Mathematics and Computer Sciences
Communication and Media

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This handbook has been prepared for advising purposes. It contains detailed requirements and advice for students majoring in Digital Arts and Sciences.

Note that the Clarkson Catalog (as amended), the Clarkson Regulations and the current edition of Courses remain the official references. As you plan your four years at Clarkson, keep in mind the special programs and general advice listed on the following page.

Co-op Program

Clarkson offers a cooperative Education Program through the Career and Professional Development Center that allows students to spend at least one semester off campus, gaining professional work experience in their field of study. Typically, students will participate in the preparation process during the sophomore year and the actual co-op experience during the junior year.

Students gain valuable experience and are paid a competitive salary, which can help defray college expenses.

Free Electives. The DA & S program includes a number of free electives. You are strongly encouraged to use these electives in a meaningful way. You can use some of your free electives to take additional courses in your major. However, many use some of their free electives to earn either a minor or a second major. Discuss your plans with your advisor.

Cross Registration

The four local colleges have a cross registration program for transferring credit. For example, Potsdam State University offers courses in foreign languages, fine arts and education, and Saint Lawrence University offers a wide variety of liberal arts and education courses.



Double Majors and Minors

It is possible for DA&S majors to complete double majors with Mathematics or Communication within the standard 120 credit hours. With only slight overloading, or a couple of summer school classes, a double major with Computer Science is also possible. Any of these would add a distinctive flavor and second strength to your DA&S degree.

Several minors in related fields are readily accommodated with the DA&S major. In particular minors in Computer Science, Computational Science, Digitally-Mediated Communication, Information Technology, Professional Communication, Software Engineering or Statistics can be added. Careful use of the Free Electives and the liberal arts electives also allows minors in Business or Economics.

Later in this handbook details of the additional requirements for the minors are listed. While every effort has been made to give accurate information, students, should consult with the offering departments on the detailed regulations for their majors or minors.

Graduate Studies.

Several universities now offer graduate programs which extend the DA&S major in specific directions. Some of these focus on the fine arts aspects while others concentrate on communication and media, animation, computational science and visualization, graphic design, or other areas. Among the schools offering such programs are Carnegie-Mellon, MIT, North Carolina State, University of Southern California, UCLA, and others.



Digital Arts & Sciences (DA&S) students benefit from an education in both the artistic and scientific aspects of digital graphic arts. The program prepares students for career opportunities in a wide range of fields — from working in movies and computer/video games, education (Web-based delivery of exciting educational materials) to computational science (scientific visualization) and graphics for virtual reality applications.

DA&S students develop their research and creative abilities through an extensive portfolio development process spanning multiple semesters. The culminating project, a digital portfolio, requires each DA&S student to demonstrate his or her creative abilities and technical prowess in multiple media using a wide variety of digital tools. The portfolio will tangibly demonstrate a student's skills and potential, and will prove to be key in leading to first-job opportunities and/or entry to graduate school.

Recent years have seen rapid growth in the opportunities and demand for qualified people to work at the intersection of arts and sciences. The success of companies like Pixar and Industrial Light and Magic in the movie industry illustrates the demand in that arena. The entertainment software industry is another area of rapid growth that requires a strong combined arts/sciences background. Web-based education (and “edutainment”) continue to grow. Scientific visualization in high-dimensional, data intensive areas like genomics has become important, too.

That these areas need a strong *combined* arts/science background is apparent. For example in producing the first *Toy Story* movie, Pixar's animation teams published approximately 35 scientific papers on the new developments in applied Mathematics, computer science and graphics.



Potential Companies looking for Graduates in:
Digital Arts and Sciences

American Management Systems
Blizzard Software
Disney
Entertainment Arts
General Electric
IBM
Industrial Light & Magic
Kodak
Lockheed Martin
Pixar
Procter & Gamble
Raytheon Systems Company
Sprint
Weta Digital
Xerox

Commercial Marketing Companies
Educational Software Publishers
Scientific Research Labs
Television Production
Web designers and consultants



University Requirements:

1. Students must complete at least 120 credit hours and achieve a cumulative QPA of at least 2.0.
2. Students must also achieve a cumulative QPA of at least 2.0 in their major. The list of courses that constitute the major is maintained by SAS. This list is also shown at the bottom of Sample Programs in this booklet.
3. All students must satisfy the requirements of the Clarkson Common Experience. The Clarkson Common Experience is described in the Clarkson Catalog and lists of courses that fulfill some of its requirements can be found on the SAS web pages.
4. FY100 First-Year Seminar is required for all students entering as first-year students.

Restrictions:

1. Up to 12 credit hours of advanced (300 and 400-level) course work in aerospace studies or military science can be counted as free electives. AS and MS courses at the 100 and 200 levels cannot be counted towards graduation requirements.
2. The following courses cannot be counted towards graduation requirements: MA031, 041, 042, 051, 061, 181, 282, SC131.



Sample Program

Freshman Year					
Course	Title	Cr.	Course	Title	Cr.
DA110	Drawing	3	DA 100	Intro to Digital Art (IA)	3
MA131	Calculus I	3	MA 132	Calculus II	3
CS 141	Computer Science I	4	CS 142	Computer Science II	3
COMM221	2D Design	3	DA 120	Intro to Sculpture	3
UNIV 190	Clarkson Seminar	3	KA ____	Knowledge Area Elective	3
FY 100	First Year Seminar	1			
	TOTAL	17		TOTAL	15
Sophomore Year					
CS 242	Adv. Java Program.	3	DA3__	300 Level DA Course	3
MA232	Differential Equations	3	MA230	3-D Space & Proj. Geo.	3
DA 200	3D Digital Design	3	COMM341	Intro to Web Design	3
DA 250	Algorithmic & Inter. Art	3	PH 132	Physics II (or PH 142)	4
PH 131	Physics I (or PH 141)	4	KA ____	Knowledge Area Elective	3
	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	MA339	Applied Linear Algebra	3
COMM327	Digital Video I	3	CS 452	Computer Graphics	3
MA/CS	MA/CS Elective	3	MA/CS	Elective	3
DA 491	Professional Practice	3	DA/COMM	Elective	3
____ ____	Free Elective	3	UNIV ____	University Course	3
				Film 344 (rec.) UNIV (STS/IA)	
	TOTAL	15		TOTAL	15
Senior Year					
MA381	Probability (or MA383)	3	DA 492	Senior Studies	3
____ ____	Science Elective	3	KA	Knowledge Area Crs.	3
____ ____	Free Elective	2	____ ____	Free Elective	3
KA ____	Knowledge Area Crs.	2	____ ____	Free Elective	2
DA/COMM/ MA/CS	Elective	3	____ ____	Free Elective	2
	TOTAL	13		TOTAL	13
				GRAND TOTAL	120

Major field of study list: All DA & S “Required Courses” list on page 7.



DA&S REQUIRED Courses (78 hours)

<u>COURSE</u>	<u>gr</u>	<u>cr</u>	<u>COURSE</u>	<u>gr</u>	<u>cr</u>
MA131	___	___	DA 100	___	___
MA132	___	___	DA 110	___	___
MA230	___	___	DA 120	___	___
MA232	___	___	COMM 221	___	___
MA339	___	___	DA 200	___	___
MA377	___	___	DA 250	___	___
MA383	___	___	DA 3__	___	___
CS 141	___	___	DA 491	___	___
CS 142	___	___	DA 492	___	___
CS 242	___	___	COMM 327	___	___
CS452/EE465	___	___	COMM 341	___	___
MA/CS Elect*	___	___	DA/COMM Elect	___	___
MA/CS Elect*	___	___	DA/COMM/MA/CS Elect	___	___

*(recommendation: CS 344, CS 445, CS 450, CS 454, CS 459, CS 461, MA 331)

SCIENCE REQUIREMENT (11 credits minimum)

PH131	___	4
PH132	___	4
_____	___	___ (PH 323 recommended)

CLARKSON COMMON EXPERIENCE (13 cr. + 6 cr. filled by required courses)

FY100	___	1	Communications Points: Total of 6 points, at least 2 points in major courses at 300+ level.
UNIV190	___	3	
University course & 4 knowledge area (KA) courses must cover all 6 areas.			Pts
COMM310	<u>x</u>	(CGI)	1. COMM 341 <u>2</u>
_____	___	(CSO)	2. COMM 327 <u>1</u>
_____	___	(EC)	3. COMM 221 <u>1</u>
DA100	<u>x</u>	(IA)	4. DA 100 <u>1</u>
_____	___	(IG)	5. DA 120 <u>1</u>
DA 310	<u>x</u>	(STS)	6. DA 492 <u>1</u>

RECOMMENDED

FILM344* ___ ___ FILM240 ___ ___ FILM322 ___ ___ FILM340 ___ ___
*This course is highly recommended for students interested in animation

PROFESSIONAL EXPERIENCE _____

FREE ELECTIVES (free elective credits to sum to 120) (may include up to 12
credits AS/MS at 300-level or above).

_____	___	___	_____	___	___	_____	___	___
_____	___	___	_____	___	___	_____	___	___



**Sample Schedule for Double Major in
Digital Arts & Science and Mathematics**

Freshman Year					
Course	Title	Cr.	Course	Title	Cr.
DA110	Drawing	3	DA 100	IntroDigital Art (IA)	3
MA131	Calculus I	3	MA 132	Calculus II	3
CS 141	Computer Science I	4	CS 142	Computer Science II	3
COMM221	2D Design	3	DA 120	Intro to Sculpture	3
UNIV 190	Clarkson Seminar	3	MA200	Math Modeling & Software	3
FY 100	First Year Seminar	1			
	TOTAL	17		TOTAL	15
Sophomore Year					
CS 242	Adv. Java Program.	3	DA3__	300 Level DA Course	3
MA232	Differential Equations	3	MA231	Calculus III	3
DA 200	3D Digital Design	3	COMM341	Intro to Web Design	3
DA 250	Algorithmic & Inter. Art	3	PH 132	Physics II (or PH 142)	4
PH 131	Physics I (or PH 141)	4	KA ____	Knowledge Area Elective	3
	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	MA339	Applied Linear Algebra	3
COMM327	Digital Video I	3	CS 452	Computer Graphics	3
MA211	Foundations	3	MA383	Applied Statistics I	3
DA 491	Professional Practice	3	DA ____	DA Elective	3
PH 323	Optics (or Sci. Elective)	3	UNIV ____	University Course Film 344 (rec.) UNIV (STS/IA)	3
	TOTAL	15		TOTAL	15
Senior Year					
MA321	Advanced Calculus I	3	DA 492	Senior Studies	3
MA 311	or MA 313	3	MA322	MA 322 or MA 314	3
DA/COMM	DA/COMM Elective	3	KA ____	Knowledge Area Crs.	3
KA ____	Knowledge Area Crs.	3	____ ____	Free Elective	3
____ ____	University Course	3			
	TOTAL	15		TOTAL	12
				GRAND TOTAL	121



**Sample Schedule for Double Major in
Digital Arts & Science and Computer Science**

Freshman Year					
Course	Title	Cr.	Course	Title	Cr.
DA110	Drawing	3	DA 100	Intro to Digital Art (IA)	3
MA131	Calculus I	3	MA 132	Calculus II	3
CS 141	Computer Science I	4	CS 142	Computer Science II	3
COMM221	2D Design	3	DA 120	Intro to Sculpture	3
UNIV 190	Clarkson Seminar	3	KA ____	Knowledge Area Elective	3
FY 100	First Year Seminar	1			
	TOTAL	17		TOTAL	15
Sophomore Year					
CS 242	Adv. Java Program.	3	DA3_ _	300 Level DA Course	3
MA232	Differential Equations	3	MA230	3-D Space & Proj. Geo.	3
DA 200	3D Digital Design	3	COMM341	Intro to Web Design	3
DA 250	Algorithmic & Inter. Art	3	PH 132	Physics II (or PH 142)	4
PH 131	Physics I (or PH 141)	4	CS 241	Computer Organization	3
	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	MA339	Applied Linear Algebra	3
COMM327	Digital Video I	3	CS 452	Computer Graphics	3
MA 211	Foundations	3	CS 344	Data Structures	3
DA 491	Professional Practice	3	DA/COMM	DA/COMM Elective	3
CS 341	Programming Languages	3	UNIV ____	University Course	3
KA ____	Knowledge Area Crs.	3		Film 344 (rec.) UNIV (STS/IA)	
	TOTAL	18	KA ____	Knowledge Area Crs.	3
				TOTAL	18
Senior Year					
COMM442	Advanced WWW	3	DA 492	Senior Studies	3
CS 345	Automata Theory	3	CS 444	Operating Systems	3
CS 350	Software Design/Develop.	3	CS 4__	CS 445 or CS 460	3
CS 455	Computer Networks	3	CS 4__	CS 4__ or COMM 444	3
____ _	Science Elective	4	MA 383	Applied Statistics I	3
			KA ____	Knowledge Area Crs.	3
	TOTAL	16		TOTAL	18
				GRAND TOTAL	134



**Sample Schedule for Double Major in
Digital Arts & Science and Communication**

Freshman Year					
Course	Title	Cr.	Course	Title	Cr.
DA110	Drawing	3	DA 100	Intro to Digital Art (IA)	3
MA131	Calculus I	3	MA 132	Calculus II	3
CS 141	Computer Science I	4	CS 142	Computer Science II	3
COMM221	2D Design	3	DA 120	Intro to Sculpture	3
UNIV 190	Clarkson Seminar	3	KA ____	Knowledge Area Elective	3
FY 100	First Year Seminar	1			
	TOTAL	17		TOTAL	15
Sophomore Year					
CS 242	Adv. Java Program.	3	DA3____	300 Level DA Course	3
MA232	Differential Equations	3	MA230	3-D Space & Proj. Geo.	3
DA 200	3D Digital Design	3	COMM341	Intro to Web Design	3
DA 250	Algorithmic & Inter. Art	3	PH 132	Physics II (or PH 142)	4
PH 131	Physics I (or PH 141)	4	KA ____	Knowledge Area Elective	3
	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	MA339	Applied Linear Algebra	3
COMM327	Digital Video I	3	CS 452	Computer Graphics	3
MA/CS	MA/CS Elective	3	MA/CS	Elective	3
DA 491	Professional Practice	3	COMM313	Prof. Communication	3
COMM210	Rhetoric	3	UNIV ____	University Course Film 344 (rec.) UNIV (STS/IA)	3
	TOTAL	15		TOTAL	15
Senior Year					
MA381	Probability (or MA383)	3	DA 492	Senior Studies	3
____	Science Elective	3	COMM310	Mass Media & Soc. (CGI)	3
COMM410	Theory & Phil. Comm (IG)	3	COMM____	COMM Elective	3
COMM490	COMM Research Proj.	3	COMM____	COMM Elective	3
COMM____	COMM Elective	3	COMM____	COMM Elective	3
	TOTAL	15		TOTAL	15
				GRAND TOTAL	124



Minors

To complete the following minors students need to exercise some of their DA&S electives and free electives as indicated. For full details consult the offering departments. In addition to required courses for the DA&S major, you need to take

Computer Science

(Computer Science Department, SC357, x2395)

MA211, CS 344 as the two MA/CS electives

One CS course at 300-level or above as a Free Elective

Computational Science

(Mathematics Department, SC357, x2395)

MA383 as one MA/CS elective

Three *applications electives* from the approved list as Free Electives

Digitally-Mediated Communication

(Communication & Media, Snell 165, x6484)

COMM220 as COMM elective

One additional COMM course at 300-level or above

Information Technology

(Computer Science Department, SC357, x2395)

CS241 and either CS454 or CS455 as MA/CS electives

IS414, COMM442, COMM444 as Free electives

Professional Communication

(Communication & Media, Snell 165, x6484)

COMM 210, 217, 313, 410 as COMM Elective and Free Electives



Software Engineering (Computer Science Department, SC357, x2395, or ECE Department, CAMP156, x7648)

CS344 as MA/CS elective

EE368 as a Free Elective

OM476 or OM485 as BUS elective

Statistics (Mathematics Department, SC357, x2395)

MA383 and one of MA381, MA382, MA384 as MA/CS electives

Three *applied statistics* classes from an approved list as Free Electives

Business (School of Business, Snell 329, x2300)

EC150, EC151 as two Liberal Arts/Social Science electives

OS286 as the BUS elective

3 Free Electives from specified list

Economics (School of Business, Snell 329, x2300)

EC150, EC151 as two Liberal Arts/Social Science electives

EC311 as a free elective

3 other EC courses from specified list as Free Electives

(Some choices qualify as Liberal Arts electives)

Undergraduate Declared Minor Form

Date Initiated _____

1. Student Name _____ Student Number _____

Local Box _____ Local Phone _____

Class Year _____ Musician's Name _____

In addition to my major in _____ and second major (if applicable) in _____

_____ I request that I be registered for a minor in _____

I UNDERSTAND THAT the University has no responsibility to offer or schedule courses in order to assure the achievement of the minor. If I decide to drop my minor, I will inform Student Administrative Services in writing. Further, I understand that all requirements for completion of the minor must be complete at the time of graduation from Clarkson University in order to be a registered part of my degree program.

Student: _____ Date _____
Signature

2. Approvals

Approval: _____ Date: _____
Chair/Director, 1st Named Major

1st Major Advisor's Name: _____

Approval: _____ Date: _____
Chair/Director, 2nd Named Major

2nd Major Advisor's Name: _____

Approved: _____ Date: _____
Chair/Director, Minor Department

Distribution: Chair/Director, 1st Major
Chair/Director, 2nd Major
Chair/Director, Minor

Sep-08

