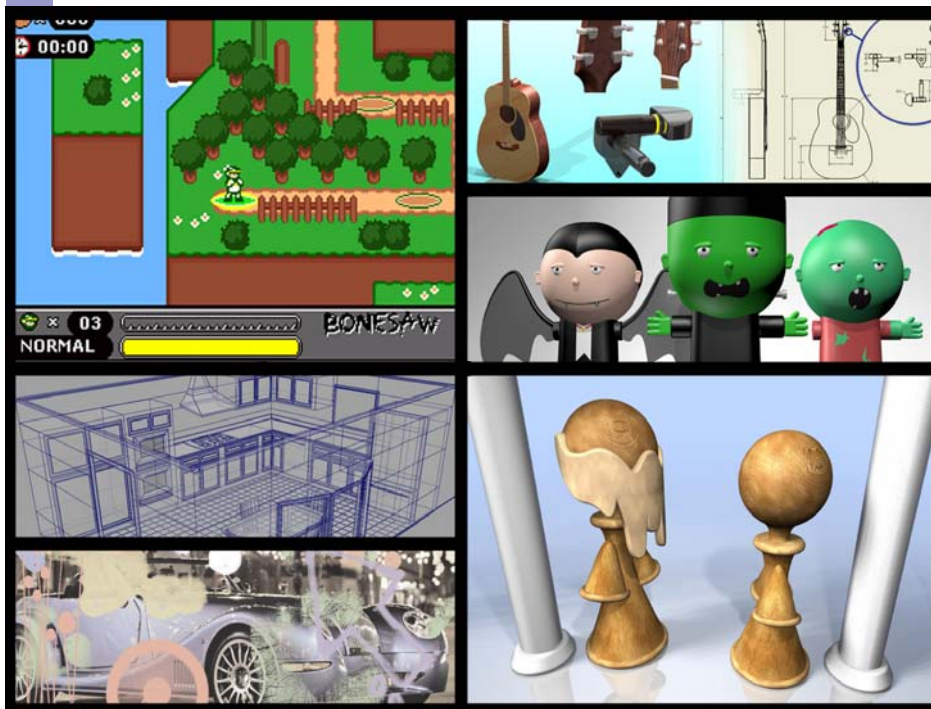


DIGITAL ARTS & SCIENCES



Student Handbook
(Class of 2009 and earlier)

Clarkson
UNIVERSITY
defy convention™

March 2008

Mathematics and Computer Sciences and 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.

Possible four-year plans for the various double majors are included later in this handbook as well as details of the additional requirements for the minors 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.



This new multidisciplinary BS program in Digital Arts and Sciences, DA & S, centered primarily in Mathematics, Computer Science and Communication and Media provides an education in both the artistic and scientific aspects of digital graphic arts.

The program addresses growing career fields: entertainment (movies and computer games), education (web-based educational materials), computational science (scientific visualization), commercial marketing, graphics for virtual reality applications, etc.

The program should appeal to students with both scientific and artistic interests and talent.

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

Electronic Arts

General Electric

IBM

Industrial Light & Magic

Kodak

Lockheed Martin

Pixar

Raytheon Systems Company

Weta Digital

Xerox

And

Commercial Marketing Companies

Educational Software Publishers

Scientific Research Labs

Sprint

Television Production

Web designers and consultants



[1] Complete at least 120 credit hours and have a 2.0 cumulative average.

[2] Students must achieve a cumulative QPA of at least 2.0 in the major field of study. The list of courses that constitute the major field 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 Foundation Curriculum. The Foundation Curriculum requirements can be found in the Clarkson Catalog and courses that fulfill the requirements can be found on-line at <http://www.clarkson.edu/sas/master/index.html>

[4] The Liberal Arts Requirement. Foundation Curriculum requires 18 credit hours: LS 195 and LS 196 plus four elective courses. The four elective courses must be chosen so that at least one is a Humanities course (designated Hum) and at least one is a Social Science course (designated Soc). A course designated H/S can be counted either way.

[5] FY 100: First-Year Seminar is **required** for all students entering as Freshmen.

[6] Up to 12 credit hours of advanced (300- and 400-level) course work in aerospace studies or military science may count as free electives toward graduation requirements. (100- and 200-level AS and MS courses do **not** count toward graduation requirements.)



Sample Program

Freshman Year					
Course	Title	Cr.Hrs	Course	Title	Cr.Hrs
DA205	Painting and Drawing	3	DA100	Digital Studio I	3
MA131	Calculus I	3	MA132	Calculus II	3
CS 141	Computer Science I	4	CS 142	Computer Science II	3
LS 195	Great Ideas I	3	LS 196	Great Ideas II	3
FY 100	First Year Seminar	1		Free Elective	3
	TOTAL	14		TOTAL	15
Sophomore Year					
CS 242	Adv. Java Program.	3	DA200	Digital Studio II	3
MA232	Differential Equations	3	MA 230	3-D Space & Proj. Geo.	3
COMM 310	Mass Media & Society	3	COMM 321	Digital Imagery	3
PH 131	or PH 141—Physics I	4	COMM 341	Intro to Web Design	3
FILM 344	Hist Art Film Animat.	3	PH 132	or PH 142—Physics II	4
	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	DA300	Digital Studio III	3
COMM 327	Digital Video Prod.	3	MA 339	Applied Linear Algebra	3
MA/CS 323	MA/CS Elective	3	COMM 427	Digital Video Prod. II	3
	Optics or Sci. Elect.	3	CS 452	Computer Graphics	3
	Free Elective	3		Social Science Elective	3
	TOTAL	15		TOTAL	15
Senior Year					
DA 491	DA&S Portfolio Dev.	2	DA 492	DA&S Portfolio Dev.	3
COMM 345	Information Architect.	3	MA/CS	MA/CS Elective	3
	BUS Elective	3		COMM Elective	3
	Liberal Arts Elective	3		Liberal Arts Elective	3
	Free Elective	3		Free Elective	3
	TOTAL	14		TOTAL	15
				GRAND TOTAL	120

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



DA&S REQUIRED Courses (75 hours)

COURSE	gr	cr		
MA131	___	___	DA 100	___ ___
MA132	___	___	DA 200	___ ___
MA230	___	___	DA 205	___ ___
MA232	___	___	DA 300	___ ___
MA339	___	___	DA 491	___ ___
MA377	___	___	DA 492	___ ___
CS 141	___	___	CS452/EE465	___ ___
CS 142	___	___	MA./CS Elect*	___ ___
CS 242	___	___	MA./CS Elect*	___ ___
COMM310	___	___	*(recommendation: CS 344, CS 445,	
COMM321	___	___	CS 450, CS 454, CS 459, CS 461, MA 331,	
COMM327	___	___	MA383)	
COMM341	___	___		
COMM345	___	___		
COMM427	___	___		
COMM	__	__		

SCIENCE REQUIREMENT (11 credits minimum)

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

LIBERAL ARTS (18 credits)

LS195	___	___		
LS196	___	___		
_____	___	___	(hum) (FILM 344 recommended)	
_____	___	___	(soc)	
_____	___	___	(hum/soc) (FILM 240, 322, 340 recommended)	
_____	___	___	(hum/soc) (FILM 240, 322, 340 recommended)	

OTHER FOUNDATION REQUIREMENTS (7 hours)

FY 100*	___	<u>1</u>		
_____	___	<u>3</u>	Business course	
<u>CS452</u>	<u>x</u>	<u>3</u>	Engineering course	(satisfied by CS 452)

FREE ELECTIVES (12 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.Hrs	Course	Title	Cr.Hrs
CS 141	Computer Science I	4	DA 100	Digital Studio I	3
MA131	Calculus I	3	CS 142	Computer Science II	3
LF 205	Painting and Drawing	3	MA132	Calculus II	3
LS 195	Great Ideas I	3	LS 196	Great Ideas II	3
FY 100	First Year Seminar	1		Free Elective	3
	TOTAL	14		TOTAL	15
Sophomore Year					
COMM 310	Mass Media & Soc.	3	DA 200	Digital Studio II	3
MA232	Differential Eqs.	3	MA231	Calculus III	3
FILM 344	Hist Art Film Anima.	3	COMM 321	Digital Imagery	3
CS 242	Adv. Prog. Concepts	3	COMM 341	Intro to Web Design	3
PH 131	Physics I	4	PH 132	Physics II	4
	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	DA 300	Digital Studio III	3
COMM 327	Digital Video I	3	MA 339	Appl Linear Algebra	3
MA211	Foundations	3	COMM 427	Digital Video II	3
PH 323	Optics* (or Sci. Elect)	3/1	CS 452	Computer Graphics	3
	BUS or Soc. Sci.	3	MA 383	Applied Statistics	3
	TOTAL	16		TOTAL	15
Senior Year					
DA 491	DA&S Portfolio Dev.	2	DA 492	DA&S Portfolio	3
COMM 345	Info Architecture	3	MA322	MA 322 or MA 314	3
MA321	Advanced Calculus I	3		COMM Elective	3
MA311	or MA 313	3		Soc Sci or BUS	3
	Liberal Arts Elective	3		Free Elective	3
	TOTAL	14		TOTAL	15
				GRAND TOTAL	120



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

Freshman Year					
Course	Title	Cr.Hrs	Course	Title	Cr.Hrs
CS 141	Computer Science I	4	DA 100	Digital Studio I	3
MA131	Calculus I	3	CS 142	Computer Science II	3
LF 205	Painting and Drawing	3	MA132	Calculus II	3
LS 195	Great Ideas I	3	LS 196	Great Ideas II	3
FY 100	First Year Seminar	1	COMM	Digital Imagery	3
	TOTAL	14	321	TOTAL	15
Sophomore Year					
CS 242	Adv. Prog. Concepts	3	DA 200	Digital Studio II	3
PH 131	Physics I	4	MA230	3-D Space & Prj. Geom	3
COMM	Mass Media & Soc.	3	COMM	Intro to Web Design	3
310			341		
MA232	Differential Eqs.	3	CS 241	Computer Organization	3
FILM	Hist Art Film Anima.	3	PH 132	Physics II	4
344	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	MA 339	Appl Linear Algebra	3
COMM	Digital Video I	3	COMM	Digital Video II	3
327		3	427		
MA211	Foundations	3	CS 452	Computer Graphics	3
PH 323	Optics* (or Sci. Elect)	3/1	DA 300	Digital Studio III	3
CS 341	Program. Languages	3	CS 344	Data Structures	3
	TOTAL	16		Liberal Arts Elective	3
				TOTAL	18
Senior Year					
DA 491	DA&S Portfolio Dev.	2	DA 492	DA&S Portfolio	3
COMM	Info Architecture	3	CS 444	Operating Systems	3
345			COMM	COMM Elective	3
CS 345	Automata Theory	3	CS 445	Compiler Construction	3
CS 4xx	CS Elective	3		Soc. Sci. Elective	3
	Business Elective	3		TOTAL	15
	Liberal Arts Elective	3			
	TOTAL	17			
				GRAND TOTAL	127



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

Freshman Year					
Course	Title	Cr.Hrs	Course	Title	Cr.Hrs
CS 141	Computer Science I	4	DA100	Digital Studio I	3
MA131	Calculus I	3	CS142	Computer Science II	3
LF 205	Painting and Drawing	3	MA132	Calculus II	3
LS 195	Great Ideas I	3	LS 196	Great Ideas II	3
FY 100	First Year Seminar	1	COMM	Writing for New Media	3
	TOTAL	14	220	TOTAL	15
Sophomore Year					
CS 242	Adv. Prog. Concepts	3	DA200	Digital Studio II	3
PH 131	Physics I	4	MA230	3-D Space & Proj. Geo.	3
COMM	Rhetoric	3	COMM	Digital Imagery	3
210			321		
MA232	Differential Eqs.	3	COMM	Intro to Web Design	3
FILM	Hist Art Film Anima.	3	341		
344			PH 132	Physics II	4
	TOTAL	16		TOTAL	16
Junior Year					
MA377	Numerical Methods	3	DA300	Digital Studio III	3
COMM	Digital Video I	3	MA 339	Appl Linear Algebra	3
327		3	COMM	Digital Video II	3
MA/CS	MA/CS Elective	3	427		
PH 323	Optics* (or Sci. Elect)	3/1	CS 452	Computer Graphics	3
COMM	Mass Media & Soc.	3		Soc. Sci. Elective	3
310				TOTAL	15
	TOTAL	16			
Senior Year					
DA 491	DA&S Portfolio Dev.	2	DA 492	DA&S Portfolio	3
COMM	Info Architecture	3	MA/CS	MA/CS Elective	3
345			COMM	COMM Research Proj.	3
COMM	Theory & Phil. Comm	3	490		
410			COMM	Prof. Communication	3
	BUS Elective	3	313		
	Liberal Arts Elective	3		Free Elective	3
	TOTAL	14		TOTAL	15
				GRAND TOTAL	120



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 elective and 3 COMM classes as Free Electives from specified list



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

