Digital Art Curriculum Framework

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I. <u>Introduction</u>

A. ACM Siggraph Education Committee: A brief history of the ACM Siggraph Education Committee.

B. Goals:

- This Digital Art Curriculum Framework aims at creating a standardization of the baseline requirements for higher education Digital Art programs.
- By being a well-established leader in computer graphics information, ACM Siggraph provides a respected platform for the distribution of this framework. The committee seeks to collaborate and consult with other established digital media associations in order to increase acceptance and utilization of the framework.

C. Basis of Digital Art Curriculum Framework:

- As a result of many factors, including availability in technology and the acceptance of the medium, Digital Art has made significant progress in recent years. The academic community has begun to embrace Digital Art as a discipline itself and has significantly expanded offerings in digital art and production as well as ancillary programs. These advancements leave room for the assessment of fundamental standards which are presented as a curriculum framework.
- This framework proposes the basic skill sets and knowledge required of a Digital Art program. It also adapts a layout that respects the evolution of Art mediums into the

digital age. This layout could be adapted to a range of institutions and programs based on their individualized needs.

This Digital Art Curriculum Framework is based upon research of existing higher education institutions with established programs as well as a review of guidelines published by academic accrediting agencies and other recognized professional organizations.

D. Challenges:

- The primary challenge in developing a framework is disinterest caused by the misunderstanding that a core curriculum in Digital Art is unlikely to be agreed upon, or is unnecessary.
 - i. "Throughout the workshop participants asked whether there is an agreed upon core curriculum in digital media or Digital Arts. The short answer to the question is no, there is no set core curriculum. While some similarities exist, digital programs vary so much in the scope and the focus of their curricula that an "agreed upon core curriculum" seems unattainable." (Blair, 2005, p.6)
- Another potential challenge is the presumption that Digital Art in an academic environment is an all-encompassing" umbrella" discipline that includes all digitally produced commercial and fine art such as Computer Animation, Computer Graphics, Interactive Design. While Digital Art may sometimes have a connection to any of these specialties, the following definition seeks to define Digital Art that does not necessarily have a commercial application.

II. <u>Defining Digital Art within the Academic Community</u>

A. To further the progress of this framework, a clear definition of Digital Art should be established. The definition should not limit itself to a technical breakdown, but should encompass the concept that Digital Art is an exceptional medium that utilizes some form of a digital process as part its creation. The conceptual dialogue behind the work should also coordinate with its digital origin.

B. Pursuing Academic Definitions:

- a. Other Definitions of Digital Art and similar terms:
 - i. "The binary intermediary used for the creation, storage, and transmission of content" (Source-Blair & Rutenbeck, 2004, p. 56)

- ii. "For this degree program, digital media are defined as any medium that uses digital interactive technologies as the engine for communication." (Source-University of Washington, Communication Department. M.C. Digital Media Department, From iDMA Journal)
- iii. "A discipline based on the creative convergence of art, science and technology for human expression, communication and social interaction." (Source- Board of Governors, State of Florida. http://www.flbog.org/asa/digitalMediaIndex.asp)
- iv. "At MIT, the phrase Media Arts and Sciences signifies the study, invention and creative use of enabling technologies for understanding and expression by people and machines." (Source- MIT Media Lab. http://www.media.mit.edu/?page id=32)
- v. "Defining computer art by its end product is difficult- the finished work can exist as an image, sound, animation, video, algorithm, CD, DVD, performance or as installation art. Perhaps a better definition can be found with the creator, an artist who uses the computer as his or her primary tool." (Source- School of Visual Art, Computer Art Department. http://www.schoolofvisualarts.edu/grad/index.jsp?sid0=2&sid1=28)
- vi. "AMODA defines digital art as art that uses digital technology in any of three ways: as the product, as the process, or as the subject." (Source- Austin Museum of Digital Art. http://www.amoda.org/about/digitalart.php)
- b. Additional Quotes Regarding Digital Art
 - i. "A painter uses paint; a sculptor stone, metal, wood and clay; a musician uses an instrument; a dancer uses the human body; a photographer uses a camera; a writer uses words; and a digital artist uses a computer. The tool has never defined whether a person creates art or not, it is the skill and depth to which the person uses that tool to express the richness of his or her soul that determines what is art, digital or otherwise."

-Pauline T'so Vice-President, Co-Founder Rhythm and Hues Studio

ii. "Since digital tools (computers) are meta-tools they can morph into any tool. Within many digital media programs the computer morphs into being a timer for control of light sculpture, a synthesizer for creating music, an interface for a biological based art forms, a portal into research on the www or a previsualization tool, using 3D software for production of rapid prototyping artworks."

"The danger for many universities and academic programs is allowing tools to drive ideas, as then you end up with art solely referencing tools or featuring 'tool capabilities'. Meta tools or computer approaches to art making should stress the misuse and unique approaches to computing that come from individual approaches. Focus on conceptual ideas and letting ideas drive tool selection can help us avoid the 'drop down menu aesthetic' that can sometimes occur in computer approaches to art making."

-Ken Rinaldo Associate Professor, Art and Technology The Ohio State University

iii. "Computers and Art can bring out the worst in each other when they first meet. One reason is that the signature of the machine can be too strong. It can overpower the intended expression, as occurs so often in holographic art and 3-D movies. Technology can be like a jalapeno pepper in a French sauce. The flavor of the computer can drown the subtler signals of the art."

-Nicholas Negroponte Being Digital

C. Digital Art vs. Digital Arts

a. When this paper was first presented at Siggraph 2007, the phrase "Digital Art" came under discussion. Some wondered why the term "Digital Arts" was not used in the way that colleges and universities refer to areas of "Fine Arts" or "Media Arts." To add clarity to this confusion, the definition of "Digital Arts" has been included to establish its relationship relative to "Digital Art."

D. The Proposed Definitions

- a. Digital Arts
 - Digital Arts consists of any media that utilizes the computer as the primary tool in the creation or presentation of the final product. As defined by Bruce Wands in "Art of the Digital Age" (2006, Thames & Hudson) this may include

Digital Art Curriculum Framework | 4

media such traditional forms as prints, photography, sculpture, video, film, animation, and music.

b. Digital Art

i. Digital Art is a subcategory of Digital Arts. The distinction lies in that Digital Art focuses creation of media as a form of artistic expression, and not merely as a form of visualization. The intention of creating digital art is not necessarily for any other reason than for the sake of creating Art using a digital technique.

III. Researching Standards

A. In order to gain better understanding of current Digital Art practices in academic institutions, the following programs can be offered as some current samples of programs in the United States. In the future, international institutions will be added to the list. For an overview of the programs, see Appendix, Section B.

B. Programs Researched:

- Carnegie-Mellon University Entertainment Technology Center (MET)
- Cornell University Computer Science /Information Science (BA)
- Massachusetts Institute of Technology Media Lab
- Ohio State University Advanced Computing Center of Art and Design (ACCAD)
- Ohio State University Art and Technology (BFA, MFA)
- Pratt Institute (BFA, MFA)
- Rhode Island School of Design Digital Media (MFA)
- Rhode Island School of Design-Film, Animation, and Video (BFA)
- Savannah College of Art and Design-Interactive Design and Game Development (BFA, MA, MFA)
- Savannah College of Art and Design- Visual Effects (BFA, MA, MFA)
- School of Visual Art Computer Art (MFA)
- The School of the Art Institute of Chicago Art and Technology Studies (BFA, MFA)
- The School of the Art Institute of Chicago Film, Video, and New Media (BFA, MFA)
- University of California San Diego Interdisciplinary Computing and the Arts (MFA)

IV. Areas of Knowledge

The Areas of Knowledge categorize recommended skill sets that students should learn while gaining a degree in Digital Art. The individual areas are collectively defined by the research of program requirements and the accrediting bodies of the same programs.

- A. Foundation Studies: The study of basic artistic skill sets such as color theory, composition, and form.
 - Courses in this area generally include areas of study such as figure drawing, life drawing, color theory, photography, 2D Design, and 3D Design.
- B. History of Digital Art: The study of concepts, theory, and history of Digital Art.
 - Courses should cover topics that distinguish Digital Art from other art forms as it has evolved and gained significance within the community.
- C. Computer-Aided Design: The practical application of creating 2D and 3D digital images.
 - Emphasis in these courses is placed on visual aesthetics and compositional balance and not necessarily on a specific computer software package.
- D. Programming: The study of scripting languages as well as other computer programming languages.
 - Historically, Digital Art was solely created through the use of programming and scripting due to a lack of tools with an interface. The later creation such tools has made the medium more accessible to those wishing to utilize it in their creations.
 - The focus would be similar to courses offered in a traditional Computer Science program, except these courses would focus on the specific problems and challenges facing Digital Artists.
- F. Digital Input/Output: The practical application of uploading images and data into the computer, processing the work and exporting it back into the real-world as a tangible work of art.
 - Digital Input should cover techniques such as image scanning and the 3D scanning of objects.
 - Digital Output should cover 2D media including a wide range forms such as simple prints to digital video to holography. This area should also include experimental

work into printing or projecting onto a variety of materials, such as film, canvas, cloth and metal.

- Digital Output could also take the form of 3D media, such as rapid-prototyping¹.
- G. Installation Art/Interactive Design: The study and practice of visual and audio communication and how it is incorporated into user interactions.
 - Interactive and Installation art can take many forms including web-based art, robotic art, gaming, or a 3D interactive sculpture.
 - Installation art focusing on integration within a real-world space should explore both interior and exterior site-specific work.
- H. Field Research and Professional Development: The opportunity of expanding the learning experience to locations outside of the classroom or campus climate.
 - The option should exist for students who wish to pursue internships, apprenticeships, or other off-campus opportunities that may compliment their education in Digital Art.
- I. Thesis/Capstone Project: The development of a body of work that is representative of both their technical ability and academic knowledge.
 - These projects could be individual or collaborative based on the desires of the institution.
 - "M.F.A. students develop an innovative and theoretically informed body of work that is exhibited in a manner and context that supports its creative content. A written component that addresses the theoretical premise of the work is also required." (Thesis course description, Savannah College of Art and Design)
- J. Additional Information:
 - Academic programs should inform students of the physical nature of working behind a computer and the physical risks involved. Maintaining the health and safety of the student/artist through the discussion of ergonomics is essential.

V. Independent Degree Program versus Interdisciplinary Study

¹ Rapid-Prototyping: the additive manufacturing method of creating a physical 3D object directly from a computer generated model.

- A. "The 2004 iDMAa digital education workshop survey revealed that Art, Architecture, Business, Communication Arts, Communication Studies, Engineering, Journalism, Mass Communication, Math & Computer Science, Music, Studio Art, Telecommunications, Theatre and Visual Arts & Dance departments have worked together at various universities to develop digital media and Digital Arts curricula (Blair & Rutenbeck, 2004)." (Blair, 2005)
- B. "Yet there seems to be a "dialectical tension" between the interdisciplinary and the disciplinary. In the workshop participants noted the pressures to regress back into more established departments. The issues of sharing faculty and resources between departments and colleges, and well as the question of who counts the students in their program, were cited as pressures fighting against the interdisciplinary of digital media and Digital Arts. In reference to sharing faculty lines with other departments, one participant stated, 'Half a position is no position at all. When the budget gets tight, interdisciplinary programs are the first to go." Digital Media and Arts Curriculum Development: Defining Digital Chris A. Blair, Union University, Jackson, TN. (Blair, 2005, pg. 63)

VI. Infrastructure

- A. To fulfill the requirements of any Digital Art program, a proper infrastructure must be in place in order to meet the needs of the program.
 - a. Studio and Library Facilities:
 - Basic space and library resources must be in place for effective academic teaching and research to take place.
 - ii. "Regular access to studios and libraries with appropriate digital media resources and reference materials in other relevant disciplines such as film studies, cultural studies, history of technology, communication theory, cognitive psychology, human factors, computer science, and business." (NASAD Handbook, pg.84)

b. Faculty:

- i. All faculty should hold terminal degrees or equivalent professional experience.
- ii. Faculty should have expert knowledge of current digital production methods and techniques, a profound understanding of the context of the studio art produced in their program as well as a mastery of aesthetic principles pertinent to the discipline.
- iii. Faculty should have a strong artistic portfolio that exemplifies a superior understanding of Digital Art.

- c. Computer Facilities:
 - i. Ideally, computer facilities should be available to students during both course times and outside of class to complete necessary assignments and tutorials.
- ii. Computer facilities should be regularly maintained by a qualified technician, and should have current, professional-level software and equipment.
- iii. Facilities should provide access to the Internet for the purposes of communication and research.
- iv. For new programs, it may be acceptable for the institution to require students to provide their own computers. "Programs that require student purchase of computers should provide the technological infrastructure and staff to support use of privately-owned machines in the classroom. The institution should be cognizant of industry preferences for certain computer platforms in setting their computer purchase requirements and infrastructure support." (NASAD Handbook, pg.84)

VII. Breakdown of Curriculum

- A. General guidelines of Curriculum Requirements (as provided by NASAD):
 - a. 25%-35% Studies in Digital Art
 - b. 20%-30% Supportive Courses in other areas of Art, Design, and Computer Science
 - c. 10-15% Studies in Art History and Theory
 - d. 25%-35% General Studies

VIII. Sample of Digital Art Curriculum

- A. Sample BFA Degree Program
 - a. General Education
 - b. Foundation Studies
 - i. Beginning Drawing
 - ii. Life Drawing
 - iii. Introduction to Two-Dimensional Art
 - iv. Introduction to Three-Dimensional Art
 - v. Introduction to Computer Art
 - vi. Two-Dimensional Studio Elective (examples Photography, Painting, Printmaking)

- vii. Three-Dimensional Studio Elective (examples Ceramics, Molten or Cold Glass, Sculpture)
- viii. Art History I
- ix. Art History II

c. Major Curriculum

- i. Digital Art History/Theory
- ii. Introduction to Programming
- iii. Digital Input/Output
- iv. Interactive Design/Web-Based Art
- v. 3D Computer Modeling/Sculpture
- vi. Studio Electives
- vii. Internship/Field-Research
- viii. Senior Project

d. Possible Studio Electives

- i. 3D Computer Animation
- ii. Advanced Computer Programming
- iii. Advanced 3D Sculpture/Rapid-Prototyping
- iv. Copyright in the Digital Age
- v. Digital Installations
- vi. Digital Sound-Based Art
- vii. Digital Cinematography
- viii. Digital Compositing
- ix. Digital and Physical Lighting
- x. Digital Environments/Matte Painting
- xi. Elements of Game Design
- xii. Experimental Scripting for Animation
- xiii. Holography
- xiv. Procedural Modeling and Animation
- xv. Robotics

Appendix A: Accreditation

Section 1: National Association of Schools of Art and Design (NASAD)

- A. Description of Digital Media requirements in Handbook (pg. 83-85)
 - Digital Media. The Bachelor of Fine Arts is appropriate as the undergraduate degree in which digital technology serves as the primary tool, medium, or environment for visual work. Titles of majors for these degrees include, but are not limited to: digital media, media arts, media design, multimedia, computer arts, Digital Arts, digital design, interactive design, Web design, and computer animation.
 - a. Programs in digital technology address a broad range of goals and objectives. For example, each program makes decisions about the extent to which students will be prepared to work from: (1) differing perspectives of technology as a tool, a medium, and/or an environment; (2) concepts and applications in other art/design practices or as a freestanding endeavor; (3) various goals for producing two-dimensional communication, three-dimensional products and environments, including time-based and interactive considerations; and (4) differing viewpoints of users/audiences, clients, and/or artists and designers.
 - b. These decisions exert a critical influence on the structure and content of each curriculum. Appropriate student achievement of goals and objectives may rely on skills, knowledge, and perspectives from more than one discipline. Accordingly, curricula containing significant work in digital media may be interdisciplinary, multi-disciplinary, or cross-disciplinary; the distribution of courses and qualifications of faculty involved in these collaborations should reflect the intent of the program.
 - c. Some majors in art or design specializations (e.g., printmaking) may include a small number of required or elective courses in digital media. In these cases, NASAD standards for the specialization apply, and the degree title contains no reference to digital media.

- d. Some majors in such specializations as graphic design, interactive design, animation, industrial design, film/video, illustration, and photography may provide an emphasis or a significant portion of study in digital media through a specific set of courses (e.g., graphic design major with an emphasis in Web design). In these cases, NASAD standards for the major area of specialization will apply; however, the standards for the Bachelor of Fine Arts in Digital Media will serve as guidelines as appropriate in the evaluation of student work and the articulation of goals and objectives of the emphasis and overall curriculum.
- e. Some degrees with majors in digital media may provide an emphasis in another art or design specialization (e.g., digital media major with an emphasis in animation). In these cases, NASAD standards for the Bachelor of Fine Arts in Digital Media will apply, and the standards for digital media will serve as guidelines as appropriate in the evaluation of student work and articulation of goals and objectives of the emphasis and overall curriculum.
- f. In addition to the specific content standards below, all programs carrying titles indicating majors in digital media must meet NASAD operational standards for majors in or based on electronic media under Section III.J.
- g. Only schools with qualified faculty, technological resources, and curricular offerings sufficient to sup-port the goals and objectives have the prerequisites to offer degrees in digital media. The institution must be able to substantiate any claims it makes for preparation of students for entry into specific vocations and must clearly differentiate the acquisition of software capability from mastery of the broader competencies associated with various professional practices.

2. Curricular Structure

- a. Standard. Curricular structure, content, and time requirements shall enable students to develop the range of knowledge, skills, and competencies expected of those holding a professional baccalaureate degree in digital media as indicated below and in section VIII.
- b. Curricula to accomplish this purpose normally adhere to the following guidelines: studies in digital media as indicated by the title of the major comprise 25-35% of the total program; supportive courses in various aspects of art, design, and film/video according to the goals and objectives of the major, 20-30%; studies in art, design, and film/video history

and theory, 10-15%; and general studies, 25-35%. Studies in the major area, supportive courses in art and design, and studies in visual arts/design histories normally total at least 65% of the curriculum. (see Section III.C. regarding forms of instruction, requirements, and electives.

3. Recommendations for General Studies

- a. (in addition to VIII.A.6.). Work in digital media is inherently synthetic and often collaborative; it draws content, resources, and methods from many disciplines. General studies requirements should have direct correlation with the overall goals and objectives of the degree program. Studies in areas such as writing, film studies, cultural studies, history of technology, communication theory, cognitive psychology, human factors, computer science, and business are recommended.
- 4. **Essential Competencies** (in addition to those stated for all professional degree programs in VIII.B. and C.):
 - a. Knowledge of the concepts related to the visual, spatial, sound, motion, interactive, and temporal elements/features of digital technology and principles for their use in the creation and application of digital media-based work.
 - Understanding of narrative and other information/language structures for organizing content in time-based or interactive media; the ability to organize and represent content structures in ways that are responsive to technological, social, and cultural systems.
 - c. Understanding of the characteristics and capabilities of various technologies (hardware and software); their appropriateness for particular expressive, functional, and strategic applications; their positions within larger contexts and systems; and their influences on individuals and society.
 - d. Knowledge of the processes for the development and coordination of digitally-based art and design strategies (for example, storyboarding, concept mapping, and the use of scenarios and personas.)
 - e. Ability to analyze and synthesize relevant aspects of human interaction in various contexts (physical, cognitive, cultural, social, political, and economic) and with respect to technologically-mediated communication, objects, and environments.
 - f. Understanding of what is useful, usable, effective, and desirable with respect to user/audience-centered digitally-based communication, objects, and environments.

- g. Knowledge of history, theory, and criticism with respect to such areas as film, video, technology, and Digital Art and design.
- h. Ability to work in teams and to organize collaborations among people from different disciplines.
- i. Ability to use the above competencies in the creation and development of professional quality digital media productions.

5. Essential Opportunities and Experiences

- a. Regular access to studios and libraries with appropriate digital media resources and reference materials in other relevant disciplines such as film studies, cultural studies, history of technology, communication theory, cognitive psychology, human factors, computer science, and business.
- b. Regular access (for instruction and for independent work) to the appropriate technology and staff necessary for the development and professional production of work in digital media. Consistent with the goals and objectives of the program, equipment should match or approach disciplinary/industry standards.
- c. Regular access to instruction and critique under faculty with educational and professional backgrounds in digital media. Appropriate faculty backgrounds and instruction should include more than software skills.
- d. Opportunities to do work that combines several disciplines or media applications, or that explores relationships between practice and research.
- e. In order to accomplish some kinds of work, students may need to study computer programming or scripting. Students expecting to practice professionally in the development of strategic uses of technology in business should engage in course work that acquaints them with large-scale technological and information systems.
- f. Programs that require student purchase of computers should provide the technological infrastructure and staff to support use of privately-owned machines in the classroom. The institution should be cognizant of industry preferences for certain computer platforms in setting their computer purchase requirements and infrastructure support.

Section 2: The Higher Learning Commission: A Commission of the North Central Association of Colleges and Schools (NCAHLC)

- A. Criterion for Accreditation (quoted from online PDF documents "Institutional Accreditation: An Overview"
 - 1. Criterion One: Mission and Integrity. The organization operates with integrity to ensure the fulfillment of its mission through structures and processes that involve the board, administration, faculty, staff, and students.
 - 2. Criterion Two: Preparing for the Future. The organization's allocation of resources and its processes for evaluation and planning demonstrate its capacity to fulfill its mission, improve the quality of education, and respond to future challenges and opportunities.
 - 3. Criterion Three: Student Learning and Effective Teaching. The organization provides evidence of student learning and teaching effectiveness that demonstrates it is fulfilling its educational mission.
 - 4. Criterion Four: Acquisition, Discovery, and Application of Knowledge. The organization promotes a life of learning for its faculty, administration, staff, and students by fostering and supporting inquiry, creativity, practice, and social responsibility in ways consistent with its mission.
 - 5. Criterion Five: Engagement and Service. As called for by its mission, the organization identifies its constituencies and serves them in ways both value.

Appendix B: Programs Researched

<u>Section 1: Carnegie-Mellon University – Entertainment Technology Center</u>

A. General Overview

"The "high concept" behind both the Entertainment Technology Center and the Masters in Entertainment Technology degree is that we are based on the principle of having technologists and non-technologists work together on projects that produce artifacts that are intended to entertain, inform, inspire, or otherwise affect an audience/guest/player/participant. The masters degree is focused on extensive semester-long project courses. This focus allows us to tackle the much larger challenge of effectively bringing together students and researchers from different disciplines. "

"We do not intend to take artists and turn them into engineers, or viceversa. While some students will be able to achieve mastery in both areas, it is not our intention to have our students master "the other side." Instead, we intend for a typical student in this program to enter with mastery/training in a specific area and spend his or her two years at Carnegie Mellon learning the vocabulary, values, and working patterns of the other culture. "(source

http://www.etc.cmu.edu/Global/philosophy/index.html)

- B. Masters of Entertainment Technology degree (MET) (198 credit hours total)
 - i. Fundamentals of Entertainment Technology (9 credit hours)
 - ii. Building Virtual Worlds (24 credit hours)
 - iii. Improvisational Acting (9 credit hours)
 - iv. The Virtual Story (12 credit hours)
 - v. ETC Interdisciplinary Project II (36 credit hours)
 - vi. ETC Interdisciplinary Project III (36 credit hours)
 - vii. Project Course IV (36 credit hours)
 - viii. Electives (30 36 credit hours)
- C. For additional information:

www.etc.cmu.edu/Global/index.html

<u>Section 2: Cornell University – Computer Science (Information Science)</u>

A. General Overview

"Information Science (IS) is an interdisciplinary field that studies the design and use of information systems in a social context. The field studies the creation, representation, organization, application, and analysis of information in digital form. The focus of Information Science is on systems and their use, rather than on the computing and communication technologies that underlie and sustain them. Moreover, Information Science examines the social, cultural, economic, historical, legal, and political contexts in which information systems are employed, both to inform the design of such systems and to understand their impact on individuals, social groups, and institutions.

The Information Science major organizes its courses into three area-based tracks:

Human-centered Systems- This area examines the relationship between humans and information, drawing from human-computer interaction and cognitive science.

Information Systems- This area examines the computer science problems of representing, organizing, storing, manipulating, and accessing digital information.

Social Systems- This area studies the cultural, economic, historical, legal, political, and social contexts in which digital information is a major factor.

Students must complete a set of eleven core courses: one introductory course, four courses in math and statistics, and two courses from each of the three IS areas. Students must also obtain depth in two tracks --- a primary and a secondary track --- that together best represent their interests. In particular, completion of the major requires four advanced courses from the selected primary track and three advanced courses from the secondary track. "(source: http://www.infosci.cornell.edu/ugrad/ArtsMajor.htm)

B. Bachelor of Arts Degree

- a. Major Curriculum
 - i. Introductory Design & Programming for the Web
 - ii. Calculus I
 - iii. Mathematical Methods for Information Science
 - iv. One of the following:

- 1. Statistical Theory and Application in the Real World
- 2. Hospitality Quantitative Analysis
- 3. Introductory Statistics
- 4. Introduction to Statistics
- 5. Basic Engineering Probability & Statistics
- 6. Biological Statistics I
- 7. Evaluating Statistical Evidence
- 8. Uncertainty Analysis in Engineering
- 9. Applied Regression Methods
- 10. Introduction to Statistics and Probability
- 11. Statistics & Research Design
- v. Linear Algebra
- vi. Cognitive Psychology
- vii. Psychology of Social Computing
- viii. Computers & Programming
- ix. Intermediate Design & Programming for the Web
- x. Microeconomics
- xi. Intermediate Microeconomic Theory
- xii. One of the following:
 - 1. Inventing an Information Society
 - 2. New Media and Society
 - 3. Computers: From the 17th Century to the Dot.Com Boom
 - 4. Computing Cultures

b. Tracks

Students must complete four advanced courses in their selected primary track and three advanced courses in their selected secondary track. The primary and secondary tracks should be selected from the course areas listed below (Human-Centered Systems, Information Systems, and Social Systems).

i. Human-Centered Systems

- 1. Human-Computer Interaction Desing
- 2. Advanced Human-Computer Interaction Design
- 3. Seminar in Computer Mediated Communication
- 4. Language and Technology
- 5. Applied Ergonomic Methods
- 6. Human Perception: Applications to Computer Graphics, Art, and Visual Display
- 7. Psychology of Visual Communications
- 8. Social Cognition

- 9. Information Processing: Conscious and Unconscious
- 10. Modeling Perception and Cognition
- 11. Learning Language

ii. Information Systems

- 1. Data-Driven Web Applications
- 2. Explorations in Artificial Intelligence
- 3. Information Retrieval
- 4. Web Information Systems
- 5. Architecture of Large-Scale Information Systems
- 6. Computer Networks
- 7. Introduction to Database Systems
- 8. Introduction to Computer Graphics
- 9. Foundations of Artificial Intelligence
- 10. Machine Learning
- 11. Software Engineering
- 12. System Security
- 13. Empirical Methods in Machine Learning and Data Mining
- 14. Computational Linguistics
- 15. Introduction to Natural Language Processing
- 16. Statistical Data Mining I
- 17. Information Technology

iii. Social Systems

- 1. Networks
- 2. New Media and Society
- 3. Media Technologies
- 4. Computers: From the 17th Century to the Dot.Com Boom
- 5. Computing Cultures
- 6. History and Theory of Digital Art
- 7. The Automatic Lifestyle: Consumer Culture and Technology
- 8. Environmental Interventions
- 9. Copyright in the Digital Age
- 10. Seminar on Applications of Information Science
- 11. Responsive Environments
- 12. Social and Economic Data
- 13. Culture, Law, and Politics of the Internet
- 14. Information Technology Strategy
- 15. Game Theory
- 16. Economic Decisions Under Uncertainty
- 17. Decision Theory I and II

- 18. Strategic Information Systems
- 19. The Law of the Internet and E-Commerce
- 20. Introduction to Game Theory
- 21. Social Networks and Social Processes
- 22. Knowledge, Technology, and Property
- C. For additional information:

http://www.infosci.cornell.edu/ugrad/index.html

Section 3: Massachusetts Institute of Technology – Media Lab

General Overview

"If anything can be certain about the future, it is that the influence of technology, especially digital technology, will continue to grow and to profoundly change how we express ourselves, how we communicate with each other and how we perceive, think about and interact with our world. These "mediating technologies" are only in the first stages of their modern evolution; they are still crude, unwieldy, unpersonalized and poorly matched to the human needs of their users. Their fullest development in those terms is emerging as one of the principal technical and design challenges of the emerging information age.

At MIT, the phrase Media Arts and Sciences signifies the study, invention and creative use of enabling technologies for understanding and expression by people and machines. The field is rooted in modern communication, computer and human sciences, and the academic program is intimately linked with research programs within the Media Laboratory. Computers and computation are the most prominent common denominators of this multi-disciplinary merger of previously separate domains. For underlying the explosive advances of the various technologies involved, we are discovering and cultivating a new set of shared intellectual and practical concerns that are becoming the foundations of a new academic discipline. In its simplest form, the field of Media Arts and Sciences can be thought of as exploring the technical, cognitive and aesthetic bases of satisfying human interaction as mediated by technology. In more forward-looking terms, it addresses the quality of life in the information-rich environment of the future. "(source:

http://www.media.mit.edu/mas/index.html)

B. Courses Offered for Spring 2007

- i. Introduction to Doing Research in MAS (Media Arts and Sciences)
- ii. Affective Computing
- iii. Writing for Computer Performance
- iv. New Paradigms for Human-Computer Interaction
- v. Special Projects in Media Arts and Sciences
- vi. Technological Tools for Learning
- vii. Meaning Machines
- viii. The Society of Mind
- ix. Relational Machines
- x. Special Projects in Media Arts and Sciences

- xi. Projects in Media and Music
- xii. Sensor Technologies for Interactive Environments
- xiii. Special Topics in Cinematic
- xiv. Special Topics in Multimedia Production
- xv. Creative Holography Workshop
- xvi. Special Topics for the Center of Advanced Visual Studies
- xvii. Special Projects in Media Arts and Sciences
- xviii. Special Topics in Media Technology: How to Make Something That Makes (Almost) Anything
- xix. Special Topics in Media Technology: Neurotechnology
- xx. Special Topics in Media Technology: Autism, Theory & Technology
- xxi. Special Topics in Media Technology: Designing Sociable Media
- xxii. Special Topics in Media Technology: One Laptop per Child,
- xxiii. Special Topics in Media Technology: Smart City Vehicles, Scooter and City Car project
- xxiv. Special Topics in Media Technology: Other Project
- xxv. Special Topics in Media Technology: Design Without Boundaries
- xxvi. Special Topics in Media Technology
- xxvii. Special Topics in Media Technology
- xxviii. Research in Media Technology
- xxix. Teaching in MAS
- xxx. MS Thesis Preparation
- xxxi. Preparation for General Exams
- xxxii. PhD Thesis
- xxxiii. MS Thesis
- C. For additional information:

www.media.mit.edu

Section 4: Ohio State University – Advanced Computing Center of Art and Design (ACCAD)

A. General Overview

"The Advanced Computing Center for the Arts and Design, known also as ACCAD, is a research center where graduate students and faculty from across the Ohio State University, study and conduct research in areas involving computer graphics and technological innovation. ACCAD forms partnerships with visual and performing artists, designers, art historians and critics, computer scientists, engineers and architects which provide multidisciplinary experiences for our graduate students." (source: http://accad.osu.edu/main.htm)

B. Courses Offered

- i. A Critical History of Computer Graphics
- ii. Advanced Digital Cinematography
- iii. Advanced Modeling Animation Production
- iv. Building 3D Virtual Environments
- v. Concept Development for Sequential Imaging
- vi. Digital Cinematography
- vii. Digital Media Production/Compositing
- viii. Digital and Physical Lighting
- ix. Experimental Scripting for Animation in Maya
- x. Expressive Motion Form Visualization
- xi. History of Animation
- xii. Interactive Arts Media I
- xiii. Interactive Arts Media II
- xiv. Motion Capture Production
- xv. Motion Studies Through Hand Drawn Animation
- xvi. Multimedia for Musicians New Ground I & II Procedural Animation
- xvii. Programming Concepts for Artists and Designers
- xviii. Programming Visual Performance & Installation Technologies
- xix. Video Game Production

C. For additional information:

www.accad.osu.edu

<u>Section 5: Ohio State University – Art and Technology</u>

A. General Overview

"Art & Technology is an interdisciplinary studio arts program in computer mediated art, which includes interactive and electronic objects and environments, multimedia, digital video, experimental 3D computer sculpture, experimental animation, locative media, art & biology, digital imaging, rapid prototyping, holography, net art, installation, sound, emerging forms and new genres. "

"The program is designed to help students discover individual aesthetics and artistic vision through conceptualization, theory and an awareness of history that critically engages the use of advanced science and technology. Students are encouraged to consider content, contexts and approaches that may not fit within traditional definitions of art or display venues. Advanced technologies are explored as creative tools and as agents, which can lead to new ideas and artistic invention central to contemporary art." (source: http://artandtech.osu.edu/)

- B. Bachelor of Fine Arts Degree (196 total credits)
 - a. General Education (76 credit hours)
 - b. Foundation Studies (50 credit hours)
 - i. Art Concepts and Issues (2 credit hours)
 - ii. Beginning Drawing (5 credit hours)
 - iii. 2-D Art (5 credit hours)
 - iv. 3-D Art (5 credit hours)
 - v. 4-D Real/Recorded Time (3 credit hours)
 - vi. Intro Photography OR Painting I OR Intro to Printmaking (10 credit hours between these three courses)
 - vii. Beginning Sculpture OR Glass Molten/Cold OR Ceramic hand/wheel (10 credit hours between these three courses)
 - viii. Digital Image Manip. I (5 credit hours)
 - ix. Beginning Life Draw. (5 credit hours)
 - c. Major Curriculum (65 credit hours)
 - i. Visual Studies Color (5 credit hours)
 - ii. Multimedia Authoring (5 credit hours)
 - iii. 3D Computer Sculpture (5 credit hours)
 - iv. Holography I (5 credit hours)
 - v. New Media (5 credit hours)
 - vi. 3D Computer Animation (5 credit hours)
 - vii. Studio Electives (30 credit hours)

- viii. Senior Seminar (3 credit hours)
- ix. Thesis Exhibition (2 credit hours)
- C. Master of Fine Arts Degree (90 total credit hours)
 - i. A minimum of 40 Major studio hours.
 - ii. Teaching Seminar (896) for 2 credits is required for GTAs in their first quarter and can be credited toward Major studio requirements.
 - iii. A maximum of 18 Thesis hours (999) or two to five credit hours are recommended.
 - iv. A minimum of 15 and maximum of 30 Other Elective hours with faculty or in classes outside the Major studio area, not limited to one studio discipline and/or technological study.
 - v. A minimum of 15 and maximum of 30 credit hours in the Humanities or Social Studies. Examples: History of Art, Creative Writing, Philosophy, and Criticism.
 - vi. A minimum of 4 and maximum of 8 Seminar hours (895) are counted towards Humanities requirements.
- D. Courses Offered
 - i. Digital Image Manipulation 1
 - ii. Art of Podcasting
 - iii. Multimedia Authoring
 - iv. 3D Sculpture/Modeling
 - v. Graduate Level Video Art 1
 - vi. Holography 1
 - vii. Holography 2
 - viii. Digital Image Manipulation II
 - ix. Honors Holography
 - x. New Media Robotics
 - xi. 3D Animation
 - xii. Video Art, DVD Studio Pro & Motion
 - xiii. Digital Input/Output
 - xiv. Senior Exhibition
 - xv. Interactive Installation
 - xvi. Graduate Independent Study
- E. For additional information:

www.artandtech.osu.edu

Section 6: Pratt Institute: Digital Arts

A. General Overview

"This program provides the means to master the new technologies that are reshaping how people interact, communicate, and create new forms of expression. Digital Arts prepares students for art and design professions in which new media and new forms have become essential tools in the creation and transmission of audio/visual ideas.

The curriculum prepares students for professional positions in the art and design disciplines that currently employ this technology: interactive media, computer animation, digital imaging, and experimental fine arts." (source: http://www.pratt.edu/digital arts ug#)

- B. Bachelor of Fine Arts Degree (134 total credits)
 - a. First Year (36 credit hours)
 - i. Drawing I: Figure & General (8)
 - ii. 3D Design (6)
 - iii. Light/Color/Design (6)
 - iv. 4D Design (4)
 - v. Survey of Art (6)
 - vi. Introduction to Literary & Critical Studies (6)
 - b. Second Year (34 credit hours)
 - i. Graphics Programming (3)
 - ii. Digital Arts Technical Workshop (2)
 - iii. Digital Imaging (3)
 - iv. 3-D Computer Modeling or Interactive Media (3)
 - v. Media Arts/Communications Design (2)
 - vi. Survey of Art: 19th Century (2)
 - vii. Social Science/Philosophy (3)
 - viii. Digital Arts in Context (3)
 - ix. Survey of Art: 20th Century (2)
 - x. Film/Communications Design (2)
 - xi. Computer Graphics Elective (3)
 - xii. Math/Science (3)
 - xiii. Studio Elective (3)
 - c. Third Year (35 credit hours)

- i. World Civilizations (6)
- ii. Social Science/Philosophy (3)
- iii. Math/Science (3)
- iv. Liberal Arts Elective (3)
- v. Computer Graphics Elective (15)
- vi. Studio Elective (5)
- d. Fourth Year (29 credit hours)
 - i. Senior Project (8)
 - ii. Computer Graphics Elective (12)
 - iii. Studio Elective (2)
 - iv. Liberal Arts Elective (5)
 - v. Art History Elective (2)
- C. Master of Fine Arts Degree (60 total credit hours)
 - a. First Year (39 credit hours)
 - i. Fundamental Computer Graphics (3)
 - ii. Digital Imaging (3)
 - iii. 3D Computer Modeling (3)
 - iv. Digital Arts in Context (3)
 - v. Graphics Programming (3)
 - vi. Studio Elective Credits (6)
 - vii. Thesis Research (3)
 - viii. Required CG Elective Credits (12)
 - ix. Art History Elective Credits (3)
 - b. Second Year (21 credit hours)
 - i. Liberal Arts Elective Credits (3)
 - ii. Thesis (9)
 - iii. Required CG Elective Credits (9)
- D. For additional information:

www.pratt.edu/digital_arts_ug#, www.pratt.edu/digital_arts_grad

Section 7: Rhode Island School of Design (RISD): Digital Media

A. General Overview

"Digital + Media, RISD's newest graduate department, explores innovative approaches to digital media and cutting-edge contemporary theory and practice. Expanding on a media art focus, the vision of the department is to provide a diverse environment for interdisciplinary and transdisciplinary exploration of digital media. The program includes a central curriculum and facilitates bridges to other existing departments at RISD, enabling individual inquiry, high-level collaboration and team-based media production. The program unfolds over a highly engaging two-year course of study." (source: http://risd.edu/digital_media.cfm)

- B. Master of Fine Arts Degree (69 credit hours total)
 - i. Digital + Media Continuum: Studio I (6)
 - ii. Digital + Media Studio Nodes (15 18)
 - iii. Digital + Media Perspectives (3)
 - iv. Digital + Media Theory (3)
 - v. Lecture Series Seminar (6)
 - vi. Digital + Media Graduate Seminar/ Tutorial (9)
 - vii. Thesis Project (6)
 - viii. Written Thesis (3)
 - ix. Elective (15 18)
 - x. Interactive Installation
 - xi. Graduate Independent Study
- C. For additional information:

www.risd.edu/digital_media.cfm

Section 8: Rhode Island School of Design (RISD): Film, Animation, and Video

A. General Overview

"The Film/Animation/Video curriculum emphasizes the form, content, and structure of images moving in time. The program teaches you the technical skills necessary to produce artistic and professional photographic, electronic and animated moving images. Students will learn to work in narrative, experimental, and documentary live action forms as well as animation. Some students may also choose to produce work that encompasses film and video within installations and performance art.

In your sophomore year, you will attend production classes in all three departmental disciplines: film, animation and video. As a junior, however, your focus becomes more concentrated on either live action or animation. In the senior year, students design and complete a degree project that is based in either film, animation, video, computer animation or combined media." (source: http://risd.edu/film_overview.cfm

- D. Bachelors of Fine Arts (126 credit hours total)
 - a. Foundation Studies (27 credit hours, 3 credit hours per course)
 - i. Foundation Drawing I
 - ii. Foundation Drawing II
 - iii. Two-Dimensional Design I
 - iv. Two-Dimensional Design II
 - v. Three-Dimensional Design I
 - vi. Three-Dimensional Design II
 - vii. English Composition + Literature I
 - viii. Art + Architectural History
 - ix. Art History
 - b. Foundation Studies (87 credit hours)
 - i. Introductory Film (3)
 - ii. Introduction Video (3)
 - iii. Animation Elective (3)
 - iv. Digital Foundation (3)
 - v. Time, Light + Sound (3)
 - vi. Degree Project (6)
 - vii. Studio Electives (24)
 - viii. Liberal Arts (24)

- c. Concentration (12 credit hours)
 - i. Live Action Curriculum
 - 1. Intermediate Studio: Film (6)
 - 2. Intermediate Studio: Video (6)
 - ii. Animation Curriculum (12)
 - 1. Intermediate Studio: Animation (3)
 - 2. Intermediate Studio: Film or (6)
 - 3. Intermediate Studio: Video or Video II (3)
- E. For additional information: www.risd.edu/film.cfm

Section 9: Savannah College of Art and Design (SCAD): Interactive Design and **Game Development**

A. General Overview

"To develop their analytical skills, undergraduate students take key courses in programming, information design and interaction design. Topics in e-marketing and entrepreneurship are designed to further expand students' horizons. Students focusing on game design experiment with real-world development tools and techniques using the latest technologies. Undergraduate students participate in studio classes and are encouraged to take electives in other departments to build on their design skills.

In the graduate program, students explore the interactive design and game industries in more depth, honing their creative-thinking and problem-solving skills and focusing on research and development. Critiques form a significant part of the learning process.

Master of fine arts students focus on individual exploration, pursue topics of special interest and have the opportunity to apply their personal, professional and educational experiences to their final theses, preparing them for careers in collegelevel teaching or in the industry." (source:

http://scad.edu/academic/majors/itgm/about.cfm)

- B. Bachelor of Fine Arts Degree (180 credit hours total)
 - a. General Education (65 credit hours)
 - b. Foundation Studies (40 credit hours, 5 credit hours per course)
 - i. Drawing I
 - ii. Drawing II
 - iii. Life Drawing I
 - iv. 2-D Design
 - v. Color Theory
 - vi. 3-D Design
 - vii. Studio Elective (10 credit hours)
 - c. Major Curriculum (65 credit hours, 5 credit hours per course)
 - i. Introduction to Interactive Design and Game Development
 - ii. Digital Design Aesthetics
 - iii. Typography OR Modeling for Game Development

- iv. Interactive Design
- v. Programming for Interactivity
- vi. Environment and Level Design OR Interactive Web Design
- vii. Game Design Criticism and Analysis OR Information and Interfaces
- viii. Interactive Design and game Development Studio I
- ix. Interactive Design and game Development Studio II
- x. Interactive Design and Game Development Portfolio
- xi. Major Elective (15)
- C. Master of Arts Degree (45 credit hours total, 5 credit hours per course)
 - i. Contemporary Art
 - ii. Interactive Design and Media Application
 - iii. Nonlinear Storytelling OR Visual Interface and Information Design
 - iv. Character Development OR Interactive Web Design
 - v. Scripting for Interactivity OR Environments for Games
 - vi. Human-centered Interactive Design
 - vii. Interactive Design and Game Development M.A. Final Project
 - viii. Major Electives (10)
- D. Master of Fine Arts Degree (90 credit hours total, 5 credit hours per course)
 - i. Contemporary Art
 - ii. Interactive Design and Media Application
 - iii. Nonlinear Storytelling OR Visual Interface and Information Design
 - iv. Character Development OR Interactive Web Design
 - v. Scripting for Interactivity OR Environments for Games
 - vi. Human-centered Interactive Design
 - vii. Interactive Design and Game Development Portfolio
 - viii. Interactive Design and Game Development Studio I
 - ix. Interactive Design and Game Development Studio II
 - x. Field or Teaching Internship
 - xi. Interactive Design and Game Development M.F.A. Thesis
 - xii. Major Electives (15)
 - xiii. Additional Electives (20 credit hours)
- E. For additional information:

www.scad.edu/academic/majors/itgm/about.cfm

Section 10: Savannah College of Art and Design (SCAD): Visual Effects

A. General Overview

"The craft of the visual effects artist has always been a combination of technology and art. Today, time-honored traditions must be combined with the latest technology as audiences become harder and harder to fool. The Savannah College of Art and Design provides a unique combination of programming and technical instruction within a traditional art school. This also allows visual effects majors the opportunity to minor in such complementary subjects as film, technical direction, architecture, photography and storyboarding." (source: http://scad.edu/academic/majors/vsfx/about.cfm)

- B. Bachelor of Fine Arts Degree (180 credit hours total)
 - a. General Education (65 credit hours)
 - b. Foundation Studies (40 credit hours, 5 credit hours per course)
 - i. Drawing I
 - ii. Drawing II
 - iii. Life Drawing I
 - iv. 2-D Design
 - v. Color Theory
 - vi. 3-D Design
 - vii. Studio Elective (10 credit hours)
 - c. Major Curriculum (65 credit hours, 5 credit hours per course)
 - i. Visual Effects-based Cinematography I
 - ii. Introduction to Visual Effects Programming
 - iii. Digital 3-D Visual Effects
 - iv. Compositing
 - v. Matte Painting
 - vi. Programming Models and Shaders I
 - vii. Procedural Modeling and Animation
 - viii. Concept Development for Visual Effects
 - ix. Visual Effects Studio I
 - x. Visual Effects Studio II
 - xi. Visual Effects Portfolio
 - xii. Major Electives (10 credit hours)
 - xiii. Additional Electives (10 credit hours)

- C. Master of Arts Degree (45 credit hours total, 5 credit hours per course)
 - i. Contemporary Art
 - ii. Programming Concepts for Visual Effects
 - iii. Computer-Generated Modeling and Design
 - iv. Visual Effects Theory and Application
 - v. Digital Compositing I
 - vi. Procedural Modeling and Animation
 - vii. Visual Effects Studio I
 - viii. Visual Effects Portfolio
 - ix. Major Elective
- D. Master of Fine Arts Degree (90 credit hours total, 5 credit hours per course)
 - i. Contemporary Art
 - ii. Programming Concepts for Visual Effects
 - iii. Computer-Generated Modeling and Design
 - iv. Visual Effects Theory and Application
 - v. Digital Compositing I
 - vi. Procedural Modeling and Animation
 - vii. Procedural 3-D and Shader Programming
 - viii. Visual Effects Studio I
 - ix. Visual Effects Studio II
 - x. Visual Effects Portfolio
 - xi. Field or Teaching Internship
 - xii. Visual Effects M.F.A. Thesis
 - xiii. Major Electives (10 hours)
 - xiv. Additional Electives (20 credit hours)
- E. For additional information:

www.scad.edu/academic/majors/vsfx/about.cfm

Section 11: The School of the Art Institute of Chicago – Art and Technology **Studies**

A. General Overview

"The Art and Technology Studies department is an interdisciplinary program in which students explore the application of both standard and emerging technologies to art making in the widest possible context. Students in art and technology gain practical, hands-on experience and develop both a solid historical and theoretical background in the field. Learning to work with the important ideas behind art and technology opens up a wide range of professional opportunities, preparing students for future technological changes and intellectual challenges. Areas of study encompass interactive multimedia, imaging, immersive VR, computer animation, kinetics, electronics, robotics, machine control, precision metalworking, responsive objects, neon, holography, digital sound and video (including multi-channel sound and multi-screen projection), electronic media-based installation, biotech, telecommunication, and internet-based art." (source:

http://www.saic.edu/degrees resources/departments/ats/index.html#overvie w/SLC_2434)

- B. Bachelor of Fine Arts Degree (132 credit hours total)
 - a. Studio Courses (72 credit hours)
 - b. Art History (18 credit hours)
 - i. Survey of Ancient to Modern Art & Architecture (3)
 - ii. Survey of Modern to Contemporary Art & Architecture (3)
 - iii. Electives (12)
 - c. Liberal Arts (30 credit hours)
 - i. English (6)
 - ii. First Year Seminar I (3)
 - iii. First Year Seminar II (3)
 - iv. Natural Science (6)
 - v. Social Science (6)
 - vi. Humanities (6)
 - vii. Liberal Arts electives (6)
 - d. General Electives (12 credit hours)
 - i. Studio, Art History, or Liberal Arts
- C. Master of Fine Arts Degree (60 credit hours total)
 - a. Studio Courses (39 credit hours)
 - b. Art History (12 credit hours)
 - c. Electives (9 credit hours)

D. For additional information: www.saic.edu/degrees_resources/departments/ats/index.html

<u>Section 12: The School of the Art Institute of Chicago – Film, Video, and New</u> Media

A. General Overview

"Media — whether film, video, or newer digital technologies — are not simply techniques, but, more broadly, the defining elements of our culture and society. In recognition of this, the Department of Film, Video, and New Media was created from two previously separate departments, film and video. For over three decades, the two departments have remained centers of formal experimentation and critical investigation in film and video. These distinguished histories are the foundations on which the Department of Film, Video, and New Media was built as an interdisciplinary media production and studies program." (source:http://www.saic.edu/degrees resources/departments/fvnm/index.html #overview)

- B. Bachelor of Fine Arts Degree (132 credit hours total)
 - a. Studio Courses (72 credit hours)
 - b. Art History (18 credit hours)
 - i. Survey of Ancient to Modern Art & Architecture (3)
 - ii. Survey of Modern to Contemporary Art & Architecture (3)
 - iii. Electives (12)
 - c. Liberal Arts (30 credit hours)
 - i. English (6)
 - ii. First Year Seminar I (3)
 - iii. First Year Seminar II (3)
 - iv. Natural Science (6)
 - v. Social Science (6)
 - vi. Humanities (6)
 - vii. Liberal Arts electives (6)
 - d. General Electives (12 credit hours)
 - i. Studio, Art History, or Liberal Arts
- C. Master of Fine Arts Degree (60 credit hours total)
 - a. Studio Courses (39 credit hours)
 - b. Art History (12 credit hours)
 - c. Electives (9 credit hours)
- D. For additional information:

www.saic.edu/degrees resources/departments/fvnm/index.html#

<u>Section 13: School of Visual Art – Computer Art</u>

General Overview

"The MFA Computer Art department is dedicated to producing digital artists of the highest caliber. This is accomplished through a progressive curriculum, a faculty comprised of well-known working professionals, state-of-the-art facilities and our location in New York. Students follow a broad curriculum, including studio work, art history and programming. Areas of specialization include telecommunications, interactive multimedia, animation and installations. Interdisciplinary study is also encouraged. Graduate student creative work has appeared in many international venues, including the SIGGRAPH Electronic Theater, Art Show and Screening Room, Prix Ars Electronica, Whitney Biennial, Annecy, Hiroshima and New York Animation Festival. Students come from all over the world geographically and bring diverse cultural heritages and artistic influences to their studies. It is expected that graduates of this program will become leaders in redefining the computer art field and be instrumental in charting its future course. "

— Bruce Wands

Chair, MFA Computer Art Director of Computer Education

- B. Masters of Fine Arts Degree (60 total credit hours)
 - a. Computer Systems I (3)
 - b. Art History and Theory (6)
 - c. Thesis I & II (6)
 - d. Thesis Writing I & II (6)
 - e. Electives (39)
- C. For additional information:

www.saic.edu/degrees resources/departments/fvnm/index.html#

<u>Section 14: University of California, San Diego – Interdisciplinary Computing</u> and the Arts

A. General Overview

"The Interdisciplinary Computing and the Arts major in the Music and Visual Arts Departments draws upon, and aims to bring together, ideas and paradigms from computer science, art and cultural theory. It takes for granted that the computer has become a metamedium and that artists working with computers are expected to combine different media forms in their works. All of this makes the program unique among currently existing computer art or design programs which, on the one hand, usually focus on the use of computers for a particular media (for instance, specializing in computer animation, or computer music, or computer design for print) and, on the other hand, do not enter into a serious dialogue with current research in computer science, only teaching the students "off-the-shelf" software. The goals of the program are to prepare the next generation of artists who will be functioning in a computer-mediated culture; to give students necessary technical, theoretical and historical backgrounds so they can contribute to the development of new aesthetics for computer media; to prepare students to mediate between the worlds of computer science and technology, the arts, and the culture at large by being equally proficient with computing and cultural concepts; and to give students sufficient understanding of the trajectories of development in computing so they can anticipate and work with the emerging trends, rather than being locked in particular software currently available on the market." (source:

http://visarts.ucsd.edu/undergraduate/major/icam)

- B. Masters of Fine Arts Degree (72 total credit hours)
 - a. Required Visual Arts Seminars (24 credits, 4 credit hours per course)
 - i. Intro to Graduate Studies in Visual Arts
 - ii. Contemporary Critical Issues
 - iii. Art Practice
 - iv. Working Critique
 - v. Introduction to Graduate Studies in Art Practice
 - vi. Seminar Elective
 - b. Individual Study with Faculty Advisor (12 credits)
 - c. Apprentice Teaching (4-12 credits)
 - d. Electives (24-36 credits)

C.	For additional information:
	$www.saic.edu/degrees_resources/departments/fvnm/index.html \#$

Resources

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- . (2005). "M.C. digital media program." Department of Communication, University of Washington. [On-line]. Available: http://depts.washington.edu/mcdm/overview/index.html
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