

FOREWORD

To evoke in oneself a feeling one has experienced, and having evoked it in oneself, then by means of movement, line, color, sounds or forms expressed in words, so to transmit the same feeling - this is the activity of art.

- Leo Tolstoy

Art Technologies 1201 is designed to expose students to the relationships among perception, art and technology. It seeks to enhance their awareness of how these three spheres of knowledge interconnect, and to assist students in becoming more comfortable when manipulating the conceptual tools of image making. Its principal objectives are to help students develop a greater awareness of the relationship between art and technology; to help them understand the importance and implications of images and image-making in our society; and to increase their fluency in creating and using visual images.

This guide was designed with the classroom teacher in mind. It can serve as a general reference for specialists, or as a practical guide to delivering Art Technologies 1201 for those with less experience in art or design. Because of the broad focus of this course, teachers experienced in a variety of disciplines, including art, will be highly effective. Wherever possible a variety of ways of exploring topics are suggested. This was done to ensure that schools with different types of equipment, and teachers with different combinations of skills can participate, while ensuring that students receive a meaningful exposure to the topics being explored.

The development of this course was driven by several priorities. One was to introduce students to the complexities of human perception, with the artistic process as the focus. Another was to examine artistic activity from the standpoint of technology. How does technology influence artists, craftspeople and designers, and how does the presence and use of technology influence our perceptions? The third was to introduce students to the process by which art, design, and craft objects are made. This course fosters a thoughtful awareness and understanding of the process by which ideas are developed, given physical form, and subjected to critical analysis within the context of human perception and technological development. The skills developed by students in this course will provide them with the background they need to succeed in media-based art programs in later years.

Students will come to Art Technologies 1201 with different aptitudes, experiences, and perspectives. This course has been designed to be flexible, and to encourage students to be

creative, independent thinkers. The course requires students to be accountable and responsible in their actions, but in return, encourages self-expression and individual solutions to problems.

The committee wanted to ensure that this course could be modified to suit local needs and perspectives. They want to encourage local schools, teachers, students, and the community to develop new ideas and approaches that meet course objectives. Extensive project ideas have been included, but teachers should feel free to develop their own ideas, projects, and resources.

The art world, like almost all other aspects of the emerging “global village”, is influenced by new technologies. A few years ago, the dominant tools of art making were the pencil, brush, hand printing press, and the camera. Now, video equipment and computers must be added to the list. Artists, designers, and craftspeople today are using new technologies in startling and innovative ways. In the process, they are redefining the role of those professions in our society, and are challenging old definitions of art and craft. Art Technologies 1201 encourages a broad and inclusive approach to art media. Project suggestions will include ideas for using both traditional and new tools. However, students must have access to these new computer-based technologies to ensure that the full scope of this course is available to them.

This guide has been designed to give teachers every possible assistance in the teaching of Art Technologies 1201. Wherever possible, simple, straightforward descriptions have been offered. Specific projects have been suggested, and objectives and evaluation methods have been clearly defined. The committee members hope that this guide will become a useful tool for teachers of Art Technologies 1201.

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TABLE OF CONTENTS

Overview	vii
Introduction	ix
The Importance of Visual Literacy	x
Teaching Strategies	xiii
The Art Room	xv
Curriculum Outcomes	xvii
Essential Graduation Learnings	xvii
Visual Art Education in Newfoundland & Labrador	xviii
Specific Curriculum Outcomes	xix
Section 1: Perception, The Eye, Technology	1
1.1 Perception and Sensation	3
1.2 The Biology of the Eye	9
1.3 The Visual Field	13
1.4 Perceptual Biases of the Eye/Brain Relationship	19
1.5 Optical Illusions	23
1.6 Perception and Technology	27
Section 2: Perception, Art, Technology	37
2.1 Art as Illusion: Space and Depth	39
2.2 Art as Illusion: Motion and Time	45
2.3 Art and Perception: Art Movements	49
2.4 Technology and the Visual Arts	55
2A The Vocabulary of Image Making	63
2A.1 Dot	65
2A.2 Line	69
2A.3 Shape and Form	73
2A.4 Texture	79
2A.5 Tone or Value	83
2A.6 Space	87
2A.7 Colour	91
2A.71 The Visible Spectrum: Additive Colour	93
2A.72 The Subtractive Theory of Colour	97
2A.73 The Vocabulary of Colour: Hue, Value, Saturation	101
2A.74 The Use of Colour to Create Space	105
2A.75 Objective and Subjective Colour	109
2A.76 Colour as Symbol; Colour as Language	111
2B Manipulating the Tools: The Principles of Design	115

Art Technologies 1201: Perception, Art and Technology

2B.1 Balance	117
2B.2 Proportion	121
2B.3 Composition: Harmony and Contrast	125
Section 3: Perception, Culture, Technology	131
3.1 Culture and Technology	133
3.2 Perception and Culture	137
3.3 Perception and Cultural Bias	141
3.4 Style and Fashion	145
3.5 Cultures and Subcultures	149
3.6 Cyberspace	151
Bibliography	155

OVERVIEW

Art Technologies 1201 was developed so that students could learn about the process by which images are perceived, created, and evaluated. It will give them an historical perspective on the close relationship between perception, technology, and image-making. It will introduce students to a working method that can be expanded and elaborated upon in studio courses at further grade levels. It will consolidate explorations begun in previous grades.

Art Technologies 1201 is divided into three sections:

- **Section 1**, entitled *Perception, the Eye, and Technology*, deals with basic principles and concepts vital to the creative process. The function of the human eye, interaction between the eye and brain, and the basics of visual perception are covered.
- **Section 2**, entitled *Perception, Art, and Technology*, has a focus on technology and its relationship to image-making, as well as, the basic perceptual tools artists use to create images.
- **Section 3**, entitled *Perception, Culture, and Technology*, explores the influence that visual imagery and new technologies is having on our culture. By the end of the course, students should possess a broad and informed understanding of the relationships between perception, technology, works of art, craft, design, and culture.

This guide is not intended to be a static text. It was designed to be used as a reference, a resource, and as a workbook. Teachers may find it helpful to work through some of the exercises to experience the creative process for themselves. Some exposure to the creative process is essential in order to convey the excitement of creating, or understand the path creative people take to move from concept through to completed object.

Each section is divided into a number of specific topics, each of which includes:

- a general explanation of the section
- discussion topics
- suggested projects

Teachers are encouraged to expose their students to new technologies. Computer-based technologies are becoming the new tools of the art world, and are just as relevant as the traditional tools and materials of the art classroom. Exposure to these new approaches benefit students. In addition to classroom-based technologies, students will access Internet as an invaluable learning and reference resource for this course.

INTRODUCTION

“Our art, and our aesthetic visions, serve to convey our truest knowledge of the world we live in, of our own times, and of our hopes for the future. Therefore, technology must be acknowledged as a primary shaper of our contemporary experience, and as a fundamental tool for the interpretation of our world.”¹

Art Technologies 1201 addresses several issues central to an understanding of the creative process, and to the perception of images in society. Art Technologies 1201 investigates the relationships between human perception, technology, and the creative process. It seeks to clarify the complex web of connections that exist between these three fields of knowledge. The significance of visual and technological literacy, as critical skills in today’s information- and image-saturated society, are implicit in all of the activities contained within the course.

Our changing world brings the ability to make and understand images into an ever-greater prominence. Imagery, as a communication tool, and as a social phenomenon, now plays a greater role in our society than it did a few decades ago. All evidence suggests that this trend will continue. Few suggest that imagery will replace our written languages of communication. However, it is now apparent that the “languages” of image-making are growing in importance, reaching a level of significance in, and penetration of our society that has not been seen before.

In this new world, our “literacy” in visual imagery will allow us to differentiate between what is important and what is not; what we are shown versus what is really happening. To acquire this knowledge, a thorough grounding in theories of human perception, coupled with an awareness of technology, and an understanding of the creative process, is essential.

¹ Tod Machover, “On Information Overload,” in *Cyberarts: Exploring Art and Technology*, ed. Linda Jacobson (San Francisco: Miller Freeman, Inc., 1992), p.5

The Importance of Visual Literacy

Literacy means that a group shares the assigned meaning of a common body of information. Visual literacy must operate somewhat within the same boundaries....Its purposes are the same as those that motivated the development of written language: to construct a basic system for learning, recognizing, making, and understanding visual messages that are negotiable by all people, not just those specially trained, like the designer, the artist, the craftsman, and the aesthetician.²

The twenty-first century is here. Transformations did not occur, like clockwork, at the changing of the millennia. This metamorphosis began slowly, long before the appointed hour. The world we are in now, and will soon be living in, is very different from the one it replaces.

Every generation believes that the one before, and the one that follows, is different. We use the term “generation gap” to describe the feelings of alienation these groups of people feel from each other. As time passes, we often discover that the differences that appeared so great were not as substantial as we had imagined. Style, more than content, was the measurement. Freed from the constraints of the moment, we discover more similarities than differences. In this instance, however, the changes are real. If we survey the world around us, we will discover that forces are already reshaping our society. To prosper, even to survive, will demand new skills, and new perspectives.

Human history is marked by a desire to expand the limits of our abilities. Many of our discoveries have involved extending our sensory, physical, and intellectual capabilities. Some inventions augmented our physical skills. Basic tools and weapons greatly expanded people’s range of physical abilities, and therefore, their chances for survival. Other inventions, such as the telescope and the microscope, enhanced our sensory capabilities. Still others improved our ability to store, retrieve, communicate, and manipulate information.

Technology, the inventions that are born from the tension between imagination and necessity, has expanded our abilities beyond our biological heritage. Even though we have acquired remarkable abilities, our awareness and understanding of them are often limited. In the days before digital technology, bodies of knowledge were often thought of as distinct from each other. Today, we are beginning to realize that insights are to be found in the relationships between those distinct bodies of knowledge. Nowhere is this lesson more pertinent than in the visual arts, design, and craft.

² Donis A. Dondis, *A Primer of Visual Literacy*, (Massachusetts: Massachusetts Institute of Technology, 1973), p.x.

Today's young people need strong visual skills. All of our communication tools are becoming more visually based. The ability to communicate using technology requires advanced language and visual communication skills. Already we have seen the office computer evolve from a text-based device to an image-based tool. Computer programs offer greater ease of use by the addition of "icons"—symbols that stand for complex actions or groups of actions. These icons, when effectively designed, can convey meaning faster, and with less confusion than text. As a result, how information is composed, arranged, and structured becomes increasingly important.

More information is being presented in visual form than ever before. All of us are immersed in visual imagery. It is present in entertainment, such as films, television dramas, or video and computer games. It is found in professional information such as reports, profit and loss statements, or presentations on business performance. One sees it in general information, such as during news and weather reports, or advertisements for products or services. Travel information such as flight schedules, vacation "hot spots", or directions on how to get the most out of your visit to the Louvre are conveyed visually. Instructional videos, computer programs, and books that tell you how to do everything from cooking a shortcake to building a planter to diagnosing illnesses utilize visual imagery. More and more information is being presented in visual form. But, what lies underneath what is being said? Does the six o'clock news tell the whole story? Is the sales picture more believable because it is visually enticing? Does life really resemble a beer commercial? Awareness of visual "language" is an important defense against being overwhelmed by a sea of visual information. A skilled understanding of visual imagery and contemporary media can provide necessary skills to discriminate among competing information in the visual world.

Donis A. Dondis, in *A Primer of Visual Literacy*, described the importance of the visual sense:

*A bias toward visual information is not difficult to find in human behavior. We seek visual reinforcement of our knowledge for many reasons, but primary among them is the directness of the information, the closeness to the real experience.*³

Art Technologies 1201 is an investigation of the world of our primary information-gathering sense. It is an inquiry into the basics of human perception, an exploration of the technologies of art and design, and a call to awaken the inner creative voice of students. The world of the future will be a world awash in images, both good and bad, instructive and manipulative, liberating and constraining. Art Technologies 1201 begins a process of learning essential to an understanding of this powerful new reality.

³ Ibid., p.2

TEACHING STRATEGIES

This course was designed to be taught by either a non-specialist or a specialist teacher. Its focus is on the individual student, engaged in the art making process. The role of the teacher has been carefully considered in the design of the course. Whenever a concept is introduced it should be experiential, involving a minimum level of skill. The teacher will then bring to the attention of the students examples of how artists have used this concept. Students should be faced with explorative, open-ended activities to make sense of through discussion, research, and comparisons. Assignments should be open-ended, and have an interesting “hook” to get them started.

Cooperative learning strategies should be employed in the delivery of this course. Discussion and reflection should be an integral part of every activity since problem solving from a personal perspective is always at work.

Students in this course will need to access as many different sources of information as possible. This may mean traditional research from books, through the use of CD-Rom, the Internet, or through doing primary research in the local environment. It may entail creating objects or products through which they learn from the process of doing. They may assemble displays or exhibitions of primary artifacts to support the topic under study. They may experiment with concepts in other disciplines. For example, in the section on optics, a joint initiative may be undertaken with the science teacher, the technology education teacher, or the physics teacher. Resource people from outside the school should also be considered to lead discussions or act as facilitators in dealing with issues. One of the first things students could become involved in, is establishing a visual file, which all might draw upon as a resource. This could include still images clipped from print sources, videos, computer graphics, or images generated by students.

Whenever possible, structure the exploration of topics or themes to events or situations that the students can, or have experienced. Information will be retained if a connection can be drawn between the concept being explored and the students’ lives.

Discussions

At the beginning and end of a topic, the group should be involved in discussion. Students’ perspectives on the topics and themes should be solicited, and encouraged. Students should be allowed considerable latitude when discussing topics.

Challenging Perspectives

Encourage students to look at familiar things in new ways. Challenge them to be critical in their evaluations and observations. Compare reactions, draw parallels, and search for new examples of the topic under discussion.

Learning by Doing

Although this is not a media exploration course, students will learn more about the issues and concepts being discussed, if they are able to work with their new knowledge in an experiential way. It is recommended that a broad range of art media be made available to students, both traditional and contemporary. Students should be encouraged to explore, and experiment with different art technologies in the completion of assignments. All forms of visual media are acceptable.

Collections

Students should be encouraged to develop “image files”, which include any items of personal visual interest. These collections can be used as source material for assignments, and as alternative visual material for class discussions. Students should be encouraged to keep their work in a portfolio. Their work should be displayed whenever possible.

Sketchbook/Journal

Students are required to keep a sketchbook as well as their “image file”. The sketchbook should function as a visual journal. A sketchbook and image file may contain computer disks, cassette or video tapes, slides, photographs, or digitally generated images in addition to traditional art or design media.

THE ART ROOM

How is teaching art different from other subjects? How is an art class different from mathematics or biology?

The art class should be an exciting and organized environment. While it is true that informality can be beneficial, too much, damages a student's ability to focus, concentrate, and learn. Most professional artists are highly disciplined people. Their studios are usually well organized and clean. The same should be true of art rooms. It is primarily a work place, regardless of how much fun can be had there! Communication between students is important, but too much talking disrupts the high level of concentration necessary for productive and creative work. The art room should not become the social "drop in centre" for the school. The art room is a place of serious academic and technical study, as well as a place where students can explore and experiment.

What should an art room be like? It should be well laid out, to minimize congestion around specific tools or equipment. It should have a good source of natural light, because making colour decisions with fluorescent light is difficult, and working under them exclusively can be taxing. It needs to provide a large working space for each student. The ideal art room will have areas available for students who need a quiet space in which to work, and it will be flexible enough that large spaces can be created for group activities. Tools and equipment will be stored away carefully, so that they are not subject to damage through accident. A sink should be in the room, as large quantities of water are often needed.

Traditionally, art rooms featured technology that had its origins anywhere from 100 to 30,000 years ago. Aside from the problems that dust and dirt cause to photographic darkrooms, or printing equipment, few art room tools had special needs. Now that artists' tools include video cameras, scanners, and computers, the specific environmental needs of this equipment must be considered. Compared to traditional art media, the new technology is often more fragile, and more sensitive to the milieu in which it is located. Where this type of equipment is located in the art room, great care must be taken to protect it from accidental damage, or from contamination by other materials. Liquids and computers do not mix! Almost all electronic equipment is sensitive to humidity, temperature, dust, static electricity, and direct sunlight.

Successful art classes have an atmosphere that is immediately recognizable. The students are active and enthusiastic. The teachers facilitate, rather than dictate. Everyone has a sense of purpose. There is a feeling of openness, where students are encouraged to experiment and explore, and where their feelings and ideas are respected and encouraged. Discussions between teacher and students are frequent, both individually and in groups. Topics discussed include both technical points, and broader philosophical, psychological, or spiritual issues.

Much of this atmosphere is facilitated by the teacher. Enthusiasm is contagious. A teacher who perceives artistic activity as inherently worthwhile will be highly effective.

CURRICULUM OUTCOMES

Essential Graduation Learnings

The Essential Graduation Learnings describe the knowledge, skills, and attitudes expected of all students who graduate high school. Achievement of these will prepare students to continue to learn throughout their lives. They confirm that students need to make connections and develop abilities across subject areas to be ready to meet the shifting and ongoing demands of life, work and study, today, and in the future.

The Essential Graduation Learnings:

AESTHETIC EXPRESSION
CITIZENSHIP
COMMUNICATION
PERSONAL DEVELOPMENT
PROBLEM SOLVING
TECHNOLOGICAL COMPETENCE
MORAL DEVELOPMENT

Graduates will be able to:

Aesthetic Expression

- respond with critical awareness to various forms of the arts and be able to express themselves through the arts.

Citizenship

- assess social, cultural, economic, and environmental interdependence in a local and global context.

Communication

- use the listening, viewing, speaking, reading, and writing modes of language(s), and mathematical and scientific concepts and symbols, to think, learn and communicate effectively.

Personal Development

- continue to learn and to pursue an active, healthy lifestyle.

Problem Solving

- use the strategies and processes needed to solve a wide variety of problems, including those requiring language, and mathematical and scientific concepts.

Technological Competence

- use a variety of technologies, demonstrate an understanding of technological applications, and apply appropriate technologies for solving problems.

Moral Development

- demonstrate understanding and appreciation for the place of belief systems in shaping the development of moral values and ethical conduct.

Visual Art Education in Newfoundland and Labrador

Visual Art education in this province builds itself around three strands:

1. **Creating, Making, Presenting**
2. **Understanding and Connecting Contexts of Time, Place and Community**
3. **Perceiving and Responding**

Visual Art education in Newfoundland and Labrador is described in terms of thirteen General Curriculum Outcomes. These outcomes relate to the entire art education program from kindergarten to level three and are connected to the three strands around which art education in this province is organized. These strands are not intended to separate the domains which are intrinsically intertwined, but to help clarify the curriculum.

The general curriculum outcomes for art education are:

Creating, Making, Presenting

Students will be expected to

- explore, challenge, develop, and express ideas in and through the arts.
- present and/or perform creative products in the arts.
- use the necessary skills, language, techniques and processes of the arts.
- create collaboratively and independently in the arts for a range of audiences and purposes.

Understanding and Connecting Contexts of Time, Place and Community

Students will be expected to

- demonstrate critical awareness of the arts and cultural production in daily life.
- understand and value the influence of the arts in creating and reflecting culture.
- respect and value the contributions of cultural groups to the arts in local and global contexts.

- understand and value the arts as a record of human experience and expression.
- examine the relationship between the arts, society, and the physical environment.

Perceiving and Responding

Students will be expected to

- respond personally, creatively, and critically to their own and others' expressive works.
- understand the role of technology in creating and responding to expressive works.
- apply critical thinking and problem solving strategies to understand and respond to their own and other's expressive work.
- analyze the relationship between artistic intent and the expressive work.

Curriculum Outcomes - Art Technologies 1201

1. Creating, Making, Presenting

By the end of this course the student will be able to:

- demonstrate facility in working with a variety of technologies in image/object creation
- apply the visual structures of design to art making
- use visual structures in art making to communicate a personal viewpoint
- discriminate between additive and subtractive color theories
- demonstrate an understanding of and facility with the use of space/depth perception and image construction
- demonstrate the ability to manipulate ideas, materials, and skills when making visual images
- apply planning strategies which guide them through the artistic process
- show technical competency in carrying out decisions
- demonstrate a working knowledge of the elements and principles of design
- show an ability to use the elements and principles of design in creative ways
- demonstrate an understanding of the relationship between the elements and principles of design, and the creation of visual images
- articulate the functional relationships of the elements and principles of design as they are used in an art work
- demonstrate increased ability to imagine as an integral part of the creative process
- understand the relationship between design and visual communication
- demonstrate an increased ability to distill thoughts and ideas into succinct visual message
- demonstrate the ability to make decisions about the appropriateness of a technique in achieving their creative/communicative/expressive intentions
- create visual structures that communicate intentions
- demonstrate the ability to work creatively
- distinguish between the physical side of seeing (sensation) and the conceptual side of seeing (perception)

- describe how we see; the physical nature of sight (sensation) and the conceptual nature of sight (perception)

2. Connecting to Contexts of Time, Place, and Community

By the end of this course the student will be able to:

- demonstrate an ability to reorganize information, materials and ideas to arrive at new configurations
- apply research skills in acquiring information to build a knowledge base from which to make decisions
- evaluate the context of images they produce
- demonstrate an understanding of and sensitivity to cultural bias when creating images
- understand the role of cultural bias in the depiction of space
- show empathy towards other people's ways of seeing
- identify point of view in their own work and the work of others
- assess the impact an image might have on a given audience
- evaluate the context of images they produce
- anticipate the impact the use of particular tools might have on an image

3. Perceiving and Responding

By the end of this course the student will be able to:

- demonstrate an understanding of the value of looking for alternative solutions
- review the entire artistic process from beginning to end each time they engage in making art
- show the ability to make appropriate decisions among alternative choices about how to visually construct or present ideas
- demonstrate facility in evaluating the degree of success of an outcome in relation to the maker's intention
- demonstrate the intellectual and verbal ability to articulate intentions in light of outcomes
- demonstrate the ability to continuously assess their progress throughout the creative process
- demonstrate the ability to assess the degree of knowledge, skills and abilities necessary to carry out a project
- display a willingness to experiment with ideas and test out possibilities
- use analytical skills to creatively assess their own work and the work of others
- conduct a comparative analysis of intention versus outcome
- use analytical skills in assessing the impact of color on communication
- assess/ speculate on the impact a new technology might have on art and on society
- recognize visual forms in the physical and built environments
- understand how visual illusions function

- examine both internal and external influences when creating visual images
- conduct both formal and informal self-evaluation
- accommodate previous and current experiences in decision making for future initiatives
- understand the visual process and its relationship to art making
- evaluate the relationship between technology and art making
- apply knowledge of how vision works in creating effective visual images
- appraise the role of optical technological aids in image creation
- recognize the significance of the relationship between the technology used in the art making process and the look of the final visual object
- show the ability to make informed judgements about the presentation of visual images
- discriminate between one-of-a-kind images and machine reproductions
- demonstrate the ability to scrutinize visual forms to determine how and why they are effective
- use skill in visually discriminating between works produced with different technologies of image making

