CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

ACADEMIC SENATE

GENERAL EDUCATION COMMITTEE

REPORT TO

THE ACADEMIC SENATE

GE-009-145

ARC 111 – Visual Literacy and Civilization: An Architect's View

(GE Sub-area C2)

General Education Committee   Date: 01/13/16[1]
                                                                    05/24/15

Executive Committee
Received and Forwarded   Date: 01/20/16[1]
                                                                    6/10/15

Academic Senate   Date: 01/27/16[1]
                                                                    FIRST READING
                                                                    07/22/15
                                                                    FIRST READING
                                                                    02/17/16
                                                                    SECOND READING
                                                                    03/09/16
                                                                    RECONSIDERED[2]

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[1] Report sent out for additional consultation. Committee recommendation changed therefore Academic
  Senate considers this to be a First Reading.
[2] Report failed in Academic Senate on 2/17/16. Was sent back to committee for reconsideration and
  modification

BACKGROUND:

This course is being proposed for GE Area C2, Philosophy and Civilization, by Drs. Alexander Ortenberg and Sarah Lorenzen. The course addresses the impact of vision-centricity on the development of Western civilization, drawing on the paradigm shifts engendered through the evolution of projective drawings. The course consists of 3 quarter lecture units (ARC111) along with a required concurrent enrollment in 1 quarter activity unit (ARC111A).

RESOURCES RECOMMENDED:

Dr. Julianna Delgado; Dr. Francelina Neto, Dr. Suketu Bhavsar

RESOURCES CONSULTED:

- Dr. Suketu Bhavsar,
- Dr. Michael Cholbi
- Dr. Julianna Delgado;
- Dr. Kristine Hartney
- Dr. Francelina Neto,
- Dr. John Lloyd,
- Dr. Claudia Pinter-Lucke
- Dr. Alexander Ortenberg
- Dr. Dale Turner
- Dr. Eileen Wallis
- Dr. Lin Wu

DISCUSSION

The course outline in the original ECO drew one comment that the material was too focused on the mathematical aspects of projections and ill-suited as a GE in Area C2. The proponent agreed and revised the ECO to better reflect the intended connection between the evolution of projective geometry and paradigm shifts in Western Civilization. A revised ECO was submitted to the GE committee by Dr. Ortenberg and the committee determined that the concerns had been adequately addressed. The GE Committee conducted its consultation towards the end of Spring 2014 and by the end of the Quarter it recommended approval of the course. However, during July 22nd Senate meeting, it became clear that not all of the consultation was finalized. The GE Committee invited constituents from Area C2 (philosophy and history) to resubmit their comments and invited another round of discussions early Fall Quarter. Because of a technical issue, the GE committee discovered, the documents that were being considered were older versions of the ECO (the author had submitted at least four revisions). In cooperation with the Senate Office, the GE Committee made sure that the Senate web-site has the latest revisions and we set another date when all of the constituencies would present their case again. Finally, on January13/2016 the consultation was completed and the Committee voted to reverse its original recommendation and to reject the course for sub-area C2. However, subsequently the Senate rejected the Committee's recommendation. At the invitation of the Executive Committee, the author and Chair of the GE Committee made several

revisions that addressed the concerns of the GE committee. In summary, these revisions included changing the title of the course to fit more area C; expanded the bibliography and readings to include non-European cultures; expanded the course content and expected outcomes to include discussion of other cultural traditions and their related concepts.

RECOMMENDATION:

The GE Committee recommends that ARC 111/A be approved as a GE Area C2 course.

ATTACHMENTS

Attachments 1 and 2 - Revised Expanded Course Outline, dated March 1st, 2016

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA
ACADEMIC SENATE
REFERRAL REQUEST FORM

Please provide all information requested in this form. Incomplete referrals will be returned. Referrals must be submitted in electronic form to: **senate@csupomona.edu**

Date: 01/21/2015
Names and titles of proponents:
Dr. Alexander Ortenberg, Associate Professor
Sarah Lorenzen, Chair

KEYWORDS: (list at least 3 keywords to facilitate referral access through database)
Graphic representation in the history Western civilization; Visual literacy and critique of Western European ocular centrism; Basics of analogue and digital representation; Orthographic, Axonometric, Perspective construction

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TITLE OF REFERRAL: **ARC 111 "An Introduction to the Theory and Practice of Descriptive Geometry" (GE Area C2, 1 units)**

BACKGROUND: (Provide background on the need for this referral and how it will benefit the University. Clearly state the expected outcome(s) or action(s) requested)

The Department of Architecture is proposing to add this course to GE Area C2.
The lecture component of the course, ARC 111, will introduce the history of descriptive geometry,   which constitutes a fascinating chapter in the post-Renaissance development of Western- European culture. The three centuries of its evolution between the early 1500s and the early 1800s saw a transformation from a highly spiritual pursuit to the establishment of rules of a transparent and instrumental technique.

The activity section of the course, ARC 111A, will incorporate the discussion of the readings introduced in the lecture component. It will also include a selection of elemental drawing exercises will help to grasp the complex theoretical issues discussed in lectures and introduced   through the required readings.

RECOMMENDED RESOURCES: Dr. Julianna Delgado, Interim Associate Dean, ENV; Dr. Francelina Neto, Director of Semester Conversion; Dr. Suketu Bhavsar, Director, Kellogg Honors College

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The Executive Committee (EC) forwards the referrals to a standing committee that researches the proposal, contacts resources, and submits a report.   The EC reviews the report, forwards it to the Senate or returns it to the standing committee for additional information, clarification, or review. After the EC accepts the report it is placed on the agenda of the next Academic Senate meeting for a first reading and a month later for a second reading where voting takes place. The referral is then sent to the President for approval. **Depending on the topic the process may take from 1 to 3 quarters.** A motion to waive the first reading, if approved by the Senate, would reduce the wait time by one month.

Is there a deadline by when this referral needs to be considered by the Academic Senate? ___No ___Yes, by _____(date). Justification for deadline:

GE COURSE EXPANDED COURSE OUTLINE

Subject Area:	**ARC**
Course Number:	**111A**
Course Title:	**Visual Literacy and Civilization: An Architect's View**
Units:	**1**
C/S Classification #:	**C-8**
Component:	**Activity**
Grading Basis: (graded only, CR/NC only, student's choice)	**Graded**
Repeat Basis: (may be taken once, taken multiple times, taken multiple times only with different topics)	**Once**
Cross Listed Course: (if offered with another department)	**No**
Dual Listed Course: (if offered as lower/upper division or undergraduate/graduate)	**No**
Major course/Service course/GE Course: (pick all that apply)	**Major course / GE Course**
General Education Area/Subarea: (as appropriate)	**C-2**
Date Prepared:	**March 1, 2016**
Prepared by:	**Alexander Ortenberg**

I. Catalog Description

The course serves as an activity component to ARC 111, which focuses on the role of visual explanation in the history of Western European world. The course serves to provide an opportunity to discuss the readings introduced in ARC 111, and to conduct drawing exercises that will illustrate these reading.

II. Required Coursework and Background

Open to students from all departments. No prerequisite required. Concurrent enrollment in ARC111 required

III. Expected Outcomes
A: List the knowledge, skills, or abilities which students should possess upon completing the course. If this is a course for the major, describe how these outcomes relate to the mission, goals and objectives of the major program.

Upon completion of this course the students will
1. Develop the basic understanding of the history of representation: proto-orthographic representation in Ancient Egypt; examples of early map-making around the world; the works on optics by al-Kindi, Avicenna (Ibn-Sina), and Alhazen (al-Haytham); the late-medieval architectural drawings; the Renaissance "invention" of perspective and of orthographic representation; the evolution of representation in the early Modern and Modern world. (GE SLO Id, IIb)
2. Understand the relationship between culture and the ways in which we visualize the world, and understand contemporary technical drawing and drafting as an embodiment of modern culture (GE SLO Id, IIb, IIIb)
3. Understand the concept of Western European ocular-centrism, and understand the Renaissance "invention" of parallel and perspectival projection in the context of a

     paradigmatic shift that produced fundamental impact on art, science, and technology (GE
     SLO Id, IIb)
4.   Develop research skills (GE SLO Ic)
5.   Improve their written communication skills (GE SLO Ia)
6.   Improve their understanding of architectural graphic representation conventions (GE SLO
     IIIb)

A.a: The course also meets the following Criteria of NAAB (National Architecture Accrediting Board)
Critical Thinking and Representation (Professional Communication Skills): Ability to write and speak effectively and use appropriate representational media with peers and with the general public (GE SLO Ia, Ib, Ic)

B: As a General Education sub-area C2 course, it meets the following criteria:
Courses in this area will provide students with an understanding of the values that make a civilized and humane society possible. Courses will enable students to examine critically the philosophical ideas and theories around which different civilizations have been organized, and to explore complex developments of those civilizations. In the study of philosophy, students should come to understand and appreciate the principles, methodologies, and thought processes employed in human inquiry. Courses should promote the capacity to make informed and responsible moral choices. Moreover, they should encourage broad historical understanding enabling students to see the past in the present and the present in the past.

The course emphasizes the central role that visual culture and visual literacy play in our civilization. It follows their history from the Renaissance revolution until the early-twentieth-century avant-garde's challenge to perspectival modes of representation. It introduces students to schools of philosophic thought that has critically analyzed the relationship between our vision-centric culture and power, as well as the role that the visual regime of Modernity has played in Western-European colonial expansion and domination of non-western cultures. See Section VII for more details.

As a General Education sub-area C2 course, also discuss how the course address the following associated GE Student Learning Outcomes:
Ia: Write effectively to various audiences
     Aligned with SLO 5, and achieved through writing assignments, including summaries of the readings and a term research paper. Students will be required to explain in writing the representational techniques while also discussing the history of representation and its role in the evolution of our civilization

Ic: Find, evaluate, use and share information effectively and ethically
     Aligned with SLO 4. Library and various databases research to get access to academic articles and image resources. Students will be required to identify academic resources and to properly cite them.

Id: Construct arguments based on sound evidence and reasoning to support an opinion or conclusion.
     Aligned with SLOs 1,2, and 3. Summaries of readings and term paper adhere to the "good essay format." Students will be required to identify a) the author's main thesis; b) the structure of the author's argument (e.g., hypothetical, counterfactual etc.); c) the nature of evidence that the author uses; d) the terminology and the audience to which the author addresses his / her argument; and to state their opinion of the effectiveness of the argument. Class discussions of readings to reinforce the standards of well-structured argument.

IIb: Analyze major literary, philosophical, historical, or artistic works and describe their aesthetic, historical, and cultural significance in society
     Aligned with SLO 1, 2, and 3. Lectures and readings will introduce the concept of graphic representation as a major factor that has determined the development of the Western European arts, architecture, theatre, and technology

IIIb: Analyze principles, methods, value systems, and ethics of social issues confronting local and global communities

> Aligned with SLOs 2and 6. Students will understand the role of visual explanations in our civilization in the context of comparison with non-Western-European traditions. They will be required to critically assess the benefits of our vision-centric culture as well as its problematic aspects such as its role in the continuous compartmentalization of knowledge, its contribution to the increasing panoticism of our society, and the privileging of the male-chauvinist gaze.

IV.   Instructional Materials-
Texts and Readings

Khaled Azzam, editor (Ririko Suzuki, educational coordinator), *Arts and Crafts of the Islamic Lands: Principles, Materials, Practice*, London: Thames and Hudson, 2013

Yves-Alain Bois, "Metamorphosis of Axonometry," in *Daidalos*, no. 1 (1981)

Mario Carpo, *Architecture in the Age of Printing: Orality, Writing, Typography, and the Printed Images in the History of Architectural Theory*, (Translated by Sarah Benson) Cambridge, Mass.: The MIT Press, 2001

Mario Carpo and Frédérique Lemerie, *Perspective, Projection, and Design: Technologies of Architectural Representation*, London and New York: Routledge, 2008

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Martin Kemp, *Visualizations: The Nature Book of Art and Science*, Berkeley: University of California Press, 2000

Martin Kemp, *Geometrical Perspective from Brunelleschi to Desargues: A Pictorial Means or an Intellectual End,* Oxford (England): Oxford University Press, 1985

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Alberto Pérez-Goméz and Louise Pelletier, *Architectural Representation and Perspective Hinge*, Cambridge: Massachusetts, 1997

D'Arcy Wentworth Tompson, *On Growth and Form,* Cambridge: University Press, 1963 (1913)

Edward Tufte, *Visual Explanations: Images and Quantities, Evidence and Narrative*, Cheshire, Connecticut: Graphics Press, 1997

Additional Instructional Materials
Additional instructional materials (tutorials and illustrations) will consist of the lecture slides and notes, tutorials, and additional readings. They will be developed for each lecture and a number of laboratory sessions and placed on the Blackboard

V.   Minimum Student Materials
In order to complete course-work students will be required to purchase drafting and drawing equipment and soft-ware not to exceed $200.00

VI.   Minimum College Facilities
Large lecture hall with blackboard / whiteboard, overhead projector, video / audio equipment and Internet connection. Regular classroom (labs) with blackboard / whiteboard, overhead projector, video / audio equipment and Internet connection

VII.   Course Outline
As many contemporary philosophers have argued, one of the most distinctive features of the Western-European civilization is its ocular-centric essence. The proposed course addresses this feature by following the rich cultural history that produced the contemporary conventions of architectural and technical drawing. The basic technics of representing depth in two-dimensional media—such as perspective, axonometric, and orthogonal projections—are explained in the context of paradigm shifts, during which each of these techniques emerged and / or gained the status of the privileged tool of design and communication. The survey includes a discussion of some ancient and non-western examples in such a way that emphasizes their differences from what some thinkers conceptualized as the hegemonic visual regime of modernity. While traceable to Platonic philosophy, it made a decisive shift with the Renaissance "invention" of projective drawings—when the understanding of the laws of geometry and its representation became an art form and a production device, but also as a spiritual pursuit. It continued with the normalization of these techniques in the end of the 18th century—when they became devoid of any mystical or philosophical overtone. Since then they have been considered neutral and objective instruments to solve practical problems. This view effectively obscures their political implications such as the roles they played in establishing the Western-European domination over non-western world, and in privileging male chauvinist gaze.

The course emphasizes the essential role that the means of visual explanation have played in the shaping of our civilization, a major device of post-Renaissance artistic practices—which, at the same time, made the Western-European technological project possible. It also introduces the 20th century intellectual tradition that draws from thinkers such as Martin Heidegger, Maurice Merleau-Ponty, Michel Foucault, Jacques Derrida, and Gilles Deleuze, all of whom expressed deep concerns about the Western-European vision-centered interpretation of knowledge, beauty, and truth.

The readings for the course and the explanation of the descriptive geometry rules will be based on the texts by architectural theorists such as Yves-Alain Bois, Mario Carpa, Jonathan Crary, Robin Evans, Alberto Pérez-Gómez, and others whose interpretation of architectural representation was influenced by the works of the above philosophers.

Assignments (specific of ARC 111A)
- Discussions of the readings (starting with presentations that will be assigned to individual students)
- Drawing exercises

I.   Course Plan
Segment 1 (weeks 1-2)
Lectures and Discussion:
1.   Introduction.
- Visual representation and the philosophical tradition of vision critique.
- Sacred geometry in pre-modern societies
- Medieval architectural design techniques: Christian Neo-Platonist interpretation of geometric proportions as a revelation of divine design
2.   Renaissance and the search for the means to representing depth in 2-dimensional media
- Luca Pacioli and the Christian mysticism
- Sebastiano Serlio's treatise. Architecture becomes perceived as a spectacle, with one-point perspective as a major design device that informs both architecture and theatre alike

Readings:
Excerpts from Robin Evans, *Translations from Drawings ….*
Excerpts from Pérez-Gómez, Alberto and Louise Pelletier, *Architectural Representation*
Drawing exercises:
Understanding the essence of planar geometric projection versus perspectival representation.
a.   Constructing the third view of an object
b.   The principles of perspective construction. The cone of vision and the picture plane

Segment 2 (weeks 3-4)
Lectures and discussion:
The Baroque and the Oblique.
- Counterreformation and the exploration of the "true" and the "distorted" image
- Vision in Western-European culture vs. non-Western-European traditions
- Projection on a curvilinear surface
- The Jesuit interpretation of shades and shadows from the sun and from artificial sources of light as a revelation of the Divine perfect vision versus human distorted vision

Readings:
Excerpts from Alberto Perez-Gomez and Louise Pelletier, *Architectural Representation ….*
Excerpts from D'Arcy Wentworth Tompson, *On Growth and Form …*
Drawing exercises:
Construct shades and shadows cast by and on an object in an orthographic view

Segment 3 (weeks 5-6)
Lectures and Discussion:
Visual representation in the16[th] and the 17th centuries and the beginning of the Scientific and the Industrial Revolution
- Two point perspective
- Illustrated books of machines and the Jesuit missions in the Far East and beyond. Representation as a means of Western-European expansion and domination

Readings:
Excerpts from Samuel Edgerton, *The Heritage of Giotto's Geometry …*
Excerpts from D'Arcy Wentworth Tompson, *On Growth and Form …*
Drawing exercises:

Perspective revisited. The "two-point" and the "three-point" perspective

Segment 4 (*weeks 7-8*):
Lectures and Discussion:
The twentieth century and the critique of perspectival representation by the artistic avant-garde and by contemporary philosophers
- The rules of descriptive geometry are finalized in the 18th century as a product of the Age of Reason and the compartmentalization of knowledge. Drawings of the machines in the *Encyclopedie.*
- Dissemination of visual literacy after the French Revolution (1789), the normalization of vision, and the emergence of distinctively modern types of representation
- Axonometric drawing and the early avant-garde's revolt against gravity

Readings:
Yves-Alain Bois, "Metamorphosis of Axonometry,"
Drawing exercises:
Axonometric construction

Segment 5 (*weeks 9-10*): Constructing the visual regime of Modernity
Lectures and discussion:
Conclusion: Vision and Visuality in the Digital Age. The Politics of Vision

VIII.   Instructional Methods
Face to face with an online (Blackboard) component.

I.   Evaluation of Outcomes
Students' learning will be evaluated according to the following assignments and activities:
Summaries of the readings (posted online, graded)
In class discussions and participation (graded)
Pop-up quizzes
Term paper (graded)

Evaluation Chart

Assignment	Develop the basic understanding of the history of representation	Understand the relationship between culture and the ways in which we visualize the world	Understand the concept of Western European ocular-centrism, and understand the Renaissance "invention" of parallel and perspectival projection in the context of a paradigmatic shift that produced fundamental impact on art, science, and technology	Develop research skills	Improve their written communication skills	Improve their understanding of architectural graphic representation conventions
summaries of the reading	X	X	X		X	X
In class discussions	X	X	X	X		X
Pop-up Quizzes	X	X				X
Term paper	X	X	X		X	
Drawing exercises	X	X	X			X

Student Evaluation Chart specific of GE area C2 SLO

Assignment	Ia Write effectively to various audiences	Ic Locate, evaluate, and responsibly use and share data employing information and communication	Id: Construct arguments based on sound evidence and reasoning to support an opinion or	IIb Analyze major literary, philosophical historical or artistic works and explain	IIIa Analyze the historical development of diverse cultures and the role they play in shaping core institutions and practices

		technologies	conclusion.	their significance in society	of individuals and societies
Summaries of readings	X		X	X	X
In class discussions and participation			X	X	X
Pop-up quizzes				X	X
Term paper	X	X	X	X	X

Note:

                         Outcome will be evaluated in the context of ARC 111 component.

Evaluations will be **conducted by:** instructor

Course Assessment

1. Department of Architecture course evaluations are distributed to students at the end of each term.
2. The Architecture program is periodically evaluated for accreditation by NAAB-National Architecture Accrediting Board. Course is assessed to meet NAAB Accreditation Criteria.

General Education Outcome Assessment

The course will be evaluated in an ongoing manner. Students will be requested to provide feedback several times per term to determine the appropriateness of the pace, the adequacy of tasks, efficiency of the instructional materials and media. There will also be a survey of students evaluations of the course two and three years past its completion in order to determine the usefulness of the course for their future education.

GE COURSE EXPANDED COURSE OUTLINE

Subject Area:	ARC
Course Number:	**111A**
Course Title:	**Visual Literacy and Civilization: An Architect's View**
Units:	**1**
C/S Classification #:	**C-8**
Component:	**Activity**
Grading Basis: (graded only, CR/NC only, student's choice)	**Graded**
Repeat Basis: (may be taken once, taken multiple times, taken multiple times only with different topics)	**Once**
Cross Listed Course: (if offered with another department)	**No**
Dual Listed Course: (if offered as lower/upper division or undergraduate/graduate)	**No**
Major course/Service course/GE Course: (pick all that apply)	**Major course / GE Course**
General Education Area/Subarea: (as appropriate)	**C-2**
Date Prepared:	**March 1, 2016**
Prepared by:	**Alexander Ortenberg**

I.   Catalog Description

The course serves as an activity component to ARC 111, which focuses on the role of visual explanation in the history of Western European world. The course serves to provide an opportunity to discuss the readings introduced in ARC 111, and to conduct drawing exercises that will illustrate these reading.

II.   Required Coursework and Background

Open to students from all departments. No prerequisite required. Concurrent enrollment in ARC111 required

III.   Expected Outcomes

A: List the knowledge, skills, or abilities which students should possess upon completing the course. If this is a course for the major, describe how these outcomes relate to the mission, goals and objectives of the major program.

Upon completion of this course the students will
1.   Develop the basic understanding of the history of representation: proto-orthographic representation in Ancient Egypt; examples of early map-making around the world; the works on optics by al-Kindi, Avicenna (Ibn-Sina), and Alhazen (al-Haytham); the late-medieval architectural drawings; the Renaissance "invention" of perspective and of orthographic representation; the evolution of representation in the early Modern and Modern world. (GE SLO Id, IIb)
2.   Understand the relationship between culture and the ways in which we visualize the world, and understand contemporary technical drawing and drafting as an embodiment of modern culture (GE SLO Id, IIb, IIIb)
3.   Understand the concept of Western European ocular-centrism, and understand the Renaissance "invention" of parallel and perspectival projection in the context of a

paradigmatic shift that produced fundamental impact on art, science, and technology (GE SLO Id, IIb)
4.   Develop research skills (GE SLO Ic)
5.   Improve their written communication skills (GE SLO Ia)
6.   Improve their understanding of architectural graphic representation conventions (GE SLO IIIb)

A.a: The course also meets the following Criteria of NAAB (National Architecture Accrediting Board)
Critical Thinking and Representation (Professional Communication Skills): Ability to write and speak effectively and use appropriate representational media with peers and with the general public (GE SLO Ia, Ib, Ic)

B: As a General Education sub-area C2 course, it meets the following criteria:
Courses in this area will provide students with an understanding of the values that make a civilized and humane society possible. Courses will enable students to examine critically the philosophical ideas and theories around which different civilizations have been organized, and to explore complex developments of those civilizations. In the study of philosophy, students should come to understand and appreciate the principles, methodologies, and thought processes employed in human inquiry. Courses should promote the capacity to make informed and responsible moral choices. Moreover, they should encourage broad historical understanding enabling students to see the past in the present and the present in the past.

The course emphasizes the central role that visual culture and visual literacy play in our civilization. It follows their history from the Renaissance revolution until the early-twentieth-century avant-garde's challenge to perspectival modes of representation. It introduces students to schools of philosophic thought that has critically analyzed the relationship between our vision-centric culture and power, as well as the role that the visual regime of Modernity has played in Western-European colonial expansion and domination of non-western cultures. See Section VII for more details.

As a General Education sub-area C2 course, also discuss how the course address the following associated GE Student Learning Outcomes:
Ia: Write effectively to various audiences
        Aligned with SLO 5, and achieved through writing assignments, including summaries of the readings and a term research paper. Students will be required to explain in writing the representational techniques while also discussing the history of representation and its role in the evolution of our civilization

Ic: Find, evaluate, use and share information effectively and ethically
        Aligned with SLO 4. Library and various databases research to get access to academic articles and image resources. Students will be required to identify academic resources and to properly cite them.

Id: Construct arguments based on sound evidence and reasoning to support an opinion or conclusion.
        Aligned with SLOs 1,2, and 3. Summaries of readings and term paper adhere to the "good essay format." Students will be required to identify a) the author's main thesis; b) the structure of the author's argument (e.g., hypothetical, counterfactual etc.); c) the nature of evidence that the author uses; d) the terminology and the audience to which the author addresses his / her argument; and to state their opinion of the effectiveness of the argument. Class discussions of readings to reinforce the standards of well-structured argument.

IIb: Analyze major literary, philosophical, historical, or artistic works and describe their aesthetic, historical, and cultural significance in society
        Aligned with SLO 1, 2, and 3. Lectures and readings will introduce the concept of graphic representation as a major factor that has determined the development of the Western European arts, architecture, theatre, and technology

IIIb: Analyze principles, methods, value systems, and ethics of social issues confronting local and global communities

> Aligned with SLOs 2and 6. Students will understand the role of visual explanations in our civilization in the context of comparison with non-Western-European traditions. They will be required to critically assess the benefits of our vision-centric culture as well as its problematic aspects such as its role in the continuous compartmentalization of knowledge, its contribution to the increasing panoticism of our society, and the privileging of the male-chauvinist gaze.

IV.   Instructional Materials-
Texts and Readings

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Additional Instructional Materials
Additional instructional materials (tutorials and illustrations) will consist of the lecture slides and notes, tutorials, and additional readings. They will be developed for each lecture and a number of laboratory sessions and placed on the Blackboard

V. Minimum Student Materials
In order to complete course-work students will be required to purchase drafting and drawing equipment and soft-ware not to exceed $200.00

VI. Minimum College Facilities
Large lecture hall with blackboard / whiteboard, overhead projector, video / audio equipment and Internet connection. Regular classroom (labs) with blackboard / whiteboard, overhead projector, video / audio equipment and Internet connection

VII. Course Outline
As many contemporary philosophers have argued, one of the most distinctive features of the Western-European civilization is its ocular-centric essence. The proposed course addresses this feature by following the rich cultural history that produced the contemporary conventions of architectural and technical drawing. The basic technics of representing depth in two-dimensional media—such as perspective, axonometric, and orthogonal projections—are explained in the context of paradigm shifts, during which each of these techniques emerged and / or gained the status of the privileged tool of design and communication. The survey includes a discussion of some ancient and non-western examples in such a way that emphasizes their differences from what some thinkers conceptualized as the hegemonic visual regime of modernity. While traceable to Platonic philosophy, it made a decisive shift with the Renaissance "invention" of projective drawings—when the understanding of the laws of geometry and its representation became an art form and a production device, but also as a spiritual pursuit. It continued with the normalization of these techniques in the end of the 18th century—when they became devoid of any mystical or philosophical overtone. Since then they have been considered neutral and objective instruments to solve practical problems. This view effectively obscures their political implications such as the roles they played in establishing the Western-European domination over non-western world, and in privileging male chauvinist gaze.

The course emphasizes the essential role that the means of visual explanation have played in the shaping of our civilization, a major device of post-Renaissance artistic practices—which, at the same time, made the Western-European technological project possible. It also introduces the 20th century intellectual tradition that draws from thinkers such as Martin Heidegger, Maurice Merleau-Ponty, Michel Foucault, Jacques Derrida, and Gilles Deleuze, all of whom expressed deep concerns about the Western-European vision-centered interpretation of knowledge, beauty, and truth.

The readings for the course and the explanation of the descriptive geometry rules will be based on the texts by architectural theorists such as Yves-Alain Bois, Mario Carpa, Jonathan Crary, Robin Evans, Alberto Pérez-Gómez, and others whose interpretation of architectural representation was influenced by the works of the above philosophers.

Assignments (specific of ARC 111A)
- Discussions of the readings (starting with presentations that will be assigned to individual students)
- Drawing exercises

I.　Course Plan
Segment 1 (weeks 1-2)
Lectures and Discussion:
1. Introduction.
   - Visual representation and the philosophical tradition of vision critique.
   - Sacred geometry in pre-modern societies
   - Medieval architectural design techniques: Christian Neo-Platonist interpretation of geometric proportions as a revelation of divine design
2. Renaissance and the search for the means to representing depth in 2-dimensional media
   - Luca Pacioli and the Christian mysticism
   - Sebastiano Serlio's treatise. Architecture becomes perceived as a spectacle, with one-point perspective as a major design device that informs both architecture and theatre alike

Readings:
Excerpts from Robin Evans, *Translations from Drawings ….*
Excerpts from Pérez-Gómez, Alberto and Louise Pelletier, *Architectural Representation*
Drawing exercises:
Understanding the essence of planar geometric projection versus perspectival representation.
a.　Constructing the third view of an object
b.　The principles of perspective construction. The cone of vision and the picture plane

Segment 2 (weeks 3-4)
Lectures and discussion:
The Baroque and the Oblique.
- Counterreformation and the exploration of the "true" and the "distorted" image
- Vision in Western-European culture vs. non-Western-European traditions
- Projection on a curvilinear surface
- The Jesuit interpretation of shades and shadows from the sun and from artificial sources of light as a revelation of the Divine perfect vision versus human distorted vision

Readings:
Excerpts from Alberto Perez-Gomez and Louise Pelletier, *Architectural Representation ….*
Excerpts from D'Arcy Wentworth Tompson, *On Growth and Form …*
Drawing exercises:
Construct shades and shadows cast by and on an object in an orthographic view

Segment 3 (weeks 5-6)
Lectures and Discussion:
Visual representation in the 16th and the 17th centuries and the beginning of the Scientific and the Industrial Revolution
- Two point perspective
- Illustrated books of machines and the Jesuit missions in the Far East and beyond. Representation as a means of Western-European expansion and domination

Readings:
Excerpts from Samuel Edgerton, *The Heritage of Giotto's Geometry …*
Excerpts from D'Arcy Wentworth Tompson, *On Growth and Form …*
Drawing exercises:

Perspective revisited. The "two-point" and the "three-point" perspective

*Segment 4 (*weeks 7-8*):*
Lectures and Discussion:
The twentieth century and the critique of perspectival representation by the artistic avant-garde and by contemporary philosophers
- The rules of descriptive geometry are finalized in the 18th century as a product of the Age of Reason and the compartmentalization of knowledge. Drawings of the machines in the *Encyclopedie.*
- Dissemination of visual literacy after the French Revolution (1789), the normalization of vision, and the emergence of distinctively modern types of representation
- Axonometric drawing and the early avant-garde's revolt against gravity

Readings:
Yves-Alain Bois, "Metamorphosis of Axonometry,"
Drawing exercises:
Axonometric construction

*Segment 5 (*weeks 9-10*):* **Constructing the visual regime of Modernity**
Lectures and discussion:
Conclusion: Vision and Visuality in the Digital Age. The Politics of Vision

    VIII.   Instructional Methods
Face to face with an online (Blackboard) component.

    I.   Evaluation of Outcomes
Students' learning will be evaluated according to the following assignments and activities:
Summaries of the readings (posted online, graded)
In class discussions and participation (graded)
Pop-up quizzes
Term paper (graded)

Evaluation Chart

Assignment	Develop the basic understanding of the history of representation	Understand the relationship between culture and the ways in which we visualize the world	Understand the concept of Western European ocular-centrism, and understand the Renaissance "invention" of parallel and perspectival projection in the context of a paradigmatic shift that produced fundamental impact on art, science, and technology	Develop research skills	Improve their written communication skills	Improve their understanding of architectural graphic representation conventions
summaries of the reading	X	X	X		X	X
In class discussions	X	X	X	X		X
Pop-up Quizzes	X	X				X
Term paper	X	X	X		X	
Drawing exercises	X	X	X			X

Student Evaluation Chart specific of GE area C2 SLO

Assignment	Ia Write effectively to various audiences	Ic Locate, evaluate, and responsibly use and share data employing information and communication	Id: Construct arguments based on sound evidence and reasoning to support an opinion or	IIb Analyze major literary, philosophical historical or artistic works and explain	IIIa Analyze the historical development of diverse cultures and the role they play in shaping core institutions and practices

		technologies	conclusion.	their significance in society	of individuals and societies
Summaries of readings	X		X	X	X
In class discussions and participation			X	X	X
Pop-up quizzes				X	X
Term paper	X	X	X	X	X

Note:

<table>
<tr><td></td><td>Outcome will be evaluated in the context of ARC 111 component.</td></tr>
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Evaluations will be **conducted by:** instructor

Course Assessment

1. Department of Architecture course evaluations are distributed to students at the end of each term.
2. The Architecture program is periodically evaluated for accreditation by NAAB-National Architecture Accrediting Board. Course is assessed to meet NAAB Accreditation Criteria.

General Education Outcome Assessment

The course will be evaluated in an ongoing manner. Students will be requested to provide feedback several times per term to determine the appropriateness of the pace, the adequacy of tasks, efficiency of the instructional materials and media. There will also be a survey of students evaluations of the course two and three years past its completion in order to determine the usefulness of the course for their future education.