

Travel and Transportation in Art

- I. ART FUNDAMENTALS 20%
 - A. Introduction to Art History
 - 1. Methods and Inquiries of Art History
 - a. The Nature of Art Historical Inquiry
 - b. Sources, Documents, and the Work of Art Historians
 - c. The Development of Art History
 - 2. Brief Overview of Art in the Western World
 - a. Ancient Civilizations
 - b. Greek and Roman Art
 - c. Early Christian and Medieval Art
 - d. The Renaissance and Baroque
 - e. Rococo, Neoclassicism, and Romanticism
 - f. Realism and Impressionism
 - g. Post-Impressionism and Other Late Nineteenth-Century Developments
 - h. The Emergence of Modernism
 - i. Abstraction
 - j. Pop Art, Minimalism, and Photo Realism
 - k. Earthworks, Installations, and Performance
 - 3. Brief Overview of Non-Western Art
 - a. Asian Art
 - b. African and Oceanic Art
 - c. Islamic Art
 - d. The Americas
 - B. Elements of Art
 - 1. Formal Qualities of Art
 - a. Line
 - b. Shape and Form
 - c. Perspective
 - d. Color
 - e. Texture
 - f. Composition
 - 2. Processes and Techniques
 - a. Drawing
 - b. Printmaking
 - c. Painting
 - d. Photography
 - e. Sculpture
 - f. Mixed Media
 - g. Performance
 - h. Craft and Folk Art
 - i. Architecture
- II. FINDING OUR WAY 20%

- A. Wayfinding without Maps
 1. SELECTED WORK: REBBELIB NAVIGATION CHART, MARSHALL ISLANDS, MICRONESIA, NINETEENTH CENTURY (BEFORE 1892)
- B. African American Histories of Fugitivity
 1. SELECTED WORK: DAWOUD BEY, *UNTITLED #13 (TREES AND REFLECTIONS)*, FROM *NIGHT COMING TENDERLY, BLACK*, 2017
- C. Perception and the Art of Walking
 1. SELECTED WORK: RICHARD LONG, *A LINE MADE BY WALKING*, 1967
- D. Mapmaking and Naming
 1. SELECTED WORK: JAUNE QUICK-TO-SEE SMITH, *STATE NAMES*, 2000

III. GLOBAL CURRENTS 20%

- A. Exploration and Empire
 1. SELECTED WORK: SIR JOHN EVERETT MILLAIS, *THE NORTH-WEST PASSAGE*, 1874
 2. SELECTED WORK: LISA REIHANA, *IN PURSUIT OF VENUS [INFECTED]*, 2015
- B. Artists in Transit: Blending Cultural Inspirations
 1. SELECTED WORK: OSMAN HAMDI BEY, *YOUNG WOMAN READING*, 1880
 2. SELECTED WORK: FRIDA KAHLO, *SELF-PORTRAIT ON THE BORDERLINE BETWEEN MEXICO AND THE UNITED STATES*, 1932
- C. Migration and Memory
 1. SELECTED WORK: LUBAINA HIMID, *BETWEEN THE TWO MY HEART IS BALANCED*, 1991

IV. TRAVELING FOR PLEASURE 20%

- A. Modern Nature Tourism
 1. SELECTED WORK: UTAGAWA HIROSHIGE, *NEW FUJI, MEGURO*, FROM *ONE HUNDRED FAMOUS VIEWS OF EDO*, 1857
 2. SELECTED WORK: CHARLES WHITTLESEY, *EL TOVAR HOTEL, SOUTH RIM OF THE GRAND CANYON, ARIZONA*, 1905
- B. Images as Souvenirs of Travel: From the Elite to the Everyday
 1. SELECTED WORK: CANALETTO, *THE SQUARE OF SAINT MARK'S, VENICE*, 1742/44
 2. SELECTED WORK: FREDERICK F. CHURCH, *GEORGE EASTMAN ON BOARD THE S.S. GALLIA*, 1890

V. TRANSPORTATION AND TECHNOLOGY 20%

- A. Representing Modern Forms of Travel in Modern Styles
 1. SELECTED WORK: CLAUDE MONET, *ARRIVAL OF THE NORMANDY TRAIN, GARE SAINT-LAZARE*, 1877
 2. SELECTED WORK: ROBERT DELAUNAY, *HOMAGE TO BLÉRIOT*, 1914
 3. SELECTED WORK: TAMARA DE LEMPICKA, *SELF-PORTRAIT (TAMARA IN A GREEN BUGATTI)*, 1929
- B. Innovative Technologies and Media
 1. SELECTED WORK: EERO SAARINEN, *TWA FLIGHT CENTER, JOHN F. KENNEDY INTERNATIONAL AIRPORT, NEW YORK, NEW YORK*, 1959–62
 2. SELECTED WORK: NAM JUNE PAIK, *ELECTRONIC SUPERHIGHWAY: CONTINENTAL U.S., ALASKA, HAWAII*, 1995

ECONOMICS

An Introduction to Economics and the Economics of Transportation

- I. FUNDAMENTAL ECONOMIC CONCEPTS 10%
 - A. Basic Assumptions of Economics
 - 1. Scarcity
 - 2. Trade-offs
 - 3. Opportunity Cost
 - 4. Rationality
 - 5. Gains from Trade
 - B. Models and Economic Theory
 - C. Positive and Normative Economics
 - D. Efficiency as a Goal
 - E. Microeconomics and Macroeconomics

- II. MICROECONOMICS 40%
 - A. Perfectly Competitive Markets
 - 1. Markets
 - 2. Demand
 - 3. Shifts in the Demand Curve
 - a. Income
 - b. The Prices of Related Goods
 - c. Tastes
 - d. Expectations
 - e. Number of Buyers
 - 4. Supply
 - 5. Shifts in the Supply Curve
 - a. Input Prices
 - b. Technology
 - c. Expectations
 - d. Number of Sellers
 - 6. Equilibrium
 - 7. The Characteristics of Competitive Market Equilibrium
 - B. Applications of the Competitive Market Model
 - 1. Changes in Market Equilibrium
 - 2. Elasticity
 - 3. Using Elasticity
 - C. Evaluating Government Policy: The Impact of Price Controls and Taxes
 - 1. Price Controls
 - 2. Taxes
 - D. International Trade
 - 1. An Isolated Economy
 - 2. Adding the Opportunity to Trade

3. Comparative Advantage and the Gains from Trade
4. The Political Economy of Trade
- E. The Profit Motive and the Behavior of Firms
 1. Economic Profits and Accounting Profits
 2. Finding the Firm's Supply Curve
 3. Entry, Exit, and the Market Supply Curve
- F. Imperfect Competition
 1. Monopoly
 2. Monopoly Supply
 3. Welfare Consequences of Monopoly
 4. Dealing with Monopolies
 5. Price Discrimination
 6. Oligopoly
 7. Monopolistic Competition
- G. Creative Destruction: The Profit Motive and the Sources of Economic Change
- H. Market Failures
 1. Externalities
 2. The Effect of Externalities on Resource Allocation
 3. Private Responses to Externalities
 4. Government Regulation of Externalities
 5. Property Rights
 6. The Effects of Private Ownership
 7. Public and Private Goods
 - a. Private Goods
 - b. Common Resources
 - c. Collective Goods
 - d. Public Goods
- I. Institutions, Organizations, and Government
 1. Pork Barrel Politics
 2. Rent-Seeking
 3. What Is the Proper Role for Government?

III. MACROECONOMICS

30%

- A. Macroeconomic Issues
 1. Economic Growth and Living Standards
 2. Recessions and Expansions
 3. Unemployment
 4. Inflation
 5. International Trade
- B. Macroeconomic Measurement
 1. Measuring Total Output: Gross Domestic Product
 - a. Market Value
 - b. Final Goods and Services
 - c. Within a Country
 - d. During a Specified Period

2. Understanding What GDP Measures
3. Other Ways to Measure GDP: Expenditures Equal Production
4. Yet Another Way to Measure GDP: Income Equals Production Equals Expenditures
5. Real GDP
6. Measuring Inflation
7. Unemployment
 - a. Frictional Unemployment
 - b. Structural Unemployment
 - c. Cyclical Unemployment
- C. Economic Growth, Productivity, and Living Standards
 1. The Circular Flow Model of the Economy
 2. What Determines How Much an Economy Produces?
- D. Savings, Investment, and the Financial System
 1. Financial Markets
 - a. The Bond Market
 - b. The Stock Market
 2. Financial Intermediaries
 - a. Banks
 - b. Mutual Funds
 3. Saving and Investment in Aggregate
 4. International Capital Flows in an Open Economy
 5. How Financial Markets Coordinate Saving and Investment Decisions
- E. Money and Prices in the Long Run
 1. What Is Money?
 2. Measuring Money
 3. The Federal Reserve System, Banks, and the Supply of Money
 4. Bank Runs
 5. Money and Inflation in the Long Run
 6. Why Worry about Inflation?
- F. Short-Run Economic Fluctuations
 1. Characteristics of Short-Run Fluctuations
 2. Potential Output, the Output Gap, and the Natural Rate of Unemployment
 3. Explaining Short-Run Fluctuations in Output
 4. The Aggregate Demand Curve
 - a. Wealth Effects
 - b. Interest Rate Effects
 - c. Foreign Exchange Effects
 5. The Aggregate Supply Curve
 6. The Keynesian Model of Short-Run Fluctuations
 7. Inflation in the Keynesian Model
 8. Using Fiscal and Monetary Policy to Stabilize the Economy

IV. THE ECONOMICS OF TRANSPORTATION

20%

- A. Demand for Transportation
 1. Transportation as Derived Demand

2. Passenger Demand
3. Freight Demand
4. Travel Choices and Value of Time
- B. Costs and Benefits of Transportation
 1. Internal vs External Costs and Benefits
 2. Capital vs Operating Costs
- C. The Pricing of Transportation Services
 1. Traveler Welfare
 2. Maximizing Profit vs Social Benefits
 3. Roadway Pricing
 - a. Marginal Cost Pricing
 - b. Second-Best Pricing
 - c. Congestion Pricing
- D. Regulations
 1. Economic and Social Regulations
 2. Environmental Regulations
 3. Safety Regulations
- E. Investment and Financing
 1. U.S. Transportation Infrastructure Investment Needs
 2. Revenue Sources
 3. Project Delivery Methods
 - a. Design-Bid-Build
 - b. Public-Private Partnerships
- F. Project Evaluation
 1. Net Present Value
 2. Internal Rate of Return
 3. Benefit-Cost Analysis
 4. Economic Impact Analysis

LITERATURE

Journeys, Quests, and Travel in Literature

- I. CRITICAL READING 15%
 - A. Purpose and Main Idea
 - B. Structure
 - C. Restatement of Information
 - D. Genres and their Characteristics
 - E. Language and Tone
 - F. Grammar and Syntax
 - G. Vocabulary in Context
 - H. Diction

- II. JOURNEYS, QUESTS, AND TRAVEL IN LITERATURE 10%
 - A. The History of Quest Narratives
 - B. Transformations: Geographical, Ethical, Existential
 - C. The Aesthetics and Politics of Travel Writing

- III. KAZUO ISHIGURO'S *THE REMAINS OF THE DAY* (1989) 40%
 - A. Kazuo Ishiguro Biography
 - 1. Early Life and Education
 - 2. Widespread Success: *The Remains of the Day*
 - 3. Later Novels and Film Writing
 - 4. 2017 Nobel Prize for Literature
 - B. Plot and Structure of *The Remains of the Day*
 - 1. Prologue: July 1956: Darlington Hall
 - 2. Day One: Evening: Salisbury
 - 3. Day Two: Morning: Salisbury
 - 4. Day Two: Afternoon: Mortimer's Pond, Dorset
 - 5. Day Three: Morning: Taunton, Somerset
 - 6. Day Three: Evening: Moscombe, near Tavistock, Devon
 - 7. Day Four: Afternoon: Little Compton, Cornwall
 - 8. Day 6: Evening: Weymouth
 - C. Characters
 - 1. Stevens
 - 2. Miss Kenton
 - 3. Lord Darlington
 - 4. William Stevens
 - 5. Mr. Farraday
 - 6. Minor Characters: M. Dupont, Mr. Lewis, Mr. Smith, Dr. Carlisle
 - D. Themes and Interpretations
 - 1. Unreliable Narration
 - 2. "Bantering"
 - 3. World War II: British Contexts
 - 4. British Upper Classes: Hierarchies and Tradition

- IV. SHORTER SELECTIONS 35%
 - A. Essay: John Steinbeck, Selections from *Travels with Charley* (1962)
 - 1. John Steinbeck's Biography and Background

2. SELECTED WORK: EXCERPT FROM *TRAVELS WITH CHARLEY* BY JOHN STEINBECK
 3. Analysis of *Travels with Charley*
- B. Essay: Audre Lorde, “The Fourth of July” (1982)
1. Audre Lorde’s Biography and Background
 2. SELECTED WORK: “THE FOURTH OF JULY” BY AUDRE LORDE
 3. Analysis of “The Fourth of July”
- C. Poetry: Robert Frost, “The Road Not Taken” (1915)
1. Robert Frost’s Biography and Background
 2. SELECTED WORK: “THE ROAD NOT TAKEN” BY ROBERT FROST
 3. Analysis of “The Road Not Taken”
- D. Samuel Taylor Coleridge, *The Rime of the Ancient Mariner* (1798)
1. Samuel Taylor Coleridge’s Biography and Background
 2. SELECTED WORK: *THE RIME OF THE ANCIENT MARINER* (TEXT OF 1834) BY SAMUEL TAYLOR COLERIDGE
- E. Essay: George Orwell, ““As I Please’: 12 May 1944” (Published in *Tribune*; Excerpted)
1. George Orwell’s Biography and Background
 2. SELECTED WORK: ““AS I PLEASE’: 12 MAY 1944” (EXCERPTED) BY GEORGE ORWELL
 3. Analysis of ““As I Please’: 12 May 1944”
- F. Poem: Elizabeth Bishop, “Questions of Travel” (1965)
1. Elizabeth Bishop’s Biography and Background
 2. SELECTED WORK: “QUESTIONS OF TRAVEL” BY ELIZABETH BISHOP
 3. Analysis of “Questions of Travel”
- G. Essay: Henry David Thoreau, “Walking” (1862)
1. Henry David Thoreau’s Biography and Background
 2. SELECTED WORK: “WALKING” BY HENRY DAVID THOREAU
 3. Analysis of “Walking”
- H. Short Story: Goli Taraghi, “The Pomegranate Lady and Her Sons” (2013)
1. Goli Taraghi’s Biography and Background
 2. SELECTED WORK: “THE POMEGRANATE LADY AND HER SONS” BY GOLI TARAGHI
 3. Analysis of “The Pomegranate Lady and Her Sons”

MATHEMATICS

General Mathematics, Geometry, and an Introduction to Differential Calculus

- I. GENERAL MATHEMATICS 25%
 - A. Simple and Compound Interest
 - B. Basic Counting
 - 1. The Multiplication Principle
 - 2. Permutations and Combinations
 - C. Probability of Equally Likely Events and Binomial Distribution

- II. GEOMETRY 65%
 - A. Right Triangles
 - 1. Pythagorean Theorem
 - 2. Special Right Triangles
 - B. Coordinate Geometry
 - 1. The Midpoint Formula
 - 2. Slope
 - 3. The Distance Formula
 - 4. Parallel and Perpendicular Lines
 - 5. Properties of Quadrilaterals in the x - y Coordinate Plane
 - C. Plane and Solid Figures
 - 1. Area and Properties of Polygons
 - 2. Surface Areas and Volumes of Three-Dimensional Figures
 - a. Prisms
 - b. Cylinders
 - c. Pyramids
 - d. Cones
 - e. Spheres
 - 3. Properties of Similar Figures
 - 4. Circles
 - a. Area
 - b. Angle Measures in Circles
 - c. Lengths of Tangents, Secants, and Intersecting Chords

III. INTRODUCTION TO DIFFERENTIAL CALCULUS 10%

- A. Average Rate of Change of Basic Polynomial Functions
- B. Basic Limits and Continuity
- C. First Derivative of Basic Polynomial Functions and Graphical Interpretation
- D. Equations of Tangent Lines

Travel and Transportation in Music

- I. BASIC ELEMENTS OF MUSIC THEORY 20%
 - A. Sound and Music
 - 1. Definitions
 - a. Music is Sound Organized in Time
 - b. Music of the Western World
 - 2. Physics of Musical Sound
 - a. Sound Waves
 - b. Instruments as Sound Sources
 - B. Pitch, Rhythm, and Harmony
 - 1. Pitch
 - a. Pitch, Frequency, and Octaves
 - b. Pitch on a Keyboard
 - c. Pitch on a Staff
 - d. Pitch on the Grand Staff
 - e. Overtones and Partial
 - f. Equal Temperament: Generating the 12 Pitches by Dividing the Octave
 - g. Scales: Leading Tone, Tonic, Dominant
 - h. Intervals
 - i. Intervals of the Major Scale
 - j. Minor Scales and Blues Inflections
 - k. Melody Defined
 - l. Contour
 - m. Range and Tessitura
 - 2. Rhythm
 - a. Beat
 - b. Tempo
 - c. Meter: Duple, Triple, and Quadruple
 - d. Rhythmic Notation
 - e. Time Signature
 - f. Simple and Compound Subdivision
 - g. Mixed and Irregular Meter
 - h. Syncopation
 - i. Polyrhythm
 - 3. Harmony
 - a. Common-Practice Tonality
 - b. Chords
 - i. Triads
 - ii. Inversions
 - c. Keys
 - i. Keys and Key Signatures
 - ii. Hierarchy of Keys: Circle of Fifths
 - d. Harmonic Progression
 - i. Dissonance and Consonance
 - ii. Diatonic Triads

- iii. The Dominant Triad's Special Role
 - iv. Bass Lines
 - v. The Dominant Seventh Chord
 - vi. Example: A Harmonized Melody
 - e. Other Diatonic Chords
 - f. Chromatic Harmonies and Modulation
 - g. Beyond Common Practice
 - C. Other Aspects of Musical Sound
 - 1. Texture, Counterpoint, Instrumentation, More Timbre
 - 2. Dynamics, Articulation, Ornamentation
 - D. Form in Music
 - 1. Perceiving Musical Form
 - 2. Elements of Form
 - a. Motive
 - b. Phrase
 - c. Cadence
 - d. Theme
 - e. Introduction and Coda
 - 3. Common Forms
 - a. Repetition
 - b. Variation
 - i. Theme and Variations
 - ii. 12-Bar Blues
 - iii. Improvisation
 - c. Contrast
 - i. Ternary and Rondo Forms
 - ii. 32-Bar Form
 - iii. Verse-Chorus Form
 - d. Development
 - i. Fugue
 - ii. Sonata Form
 - E. Which Is the Real Music? Scores, Recordings, and Performance

II. CELEBRATIONS OF TRANSPORT 28%

- A. Muscle-Powered Movement
 - 1. Feet First
 - 2. The Use of Wheels
 - 3. LISTENING COMPANION 1: "DAISY BELL (BICYCLE BUILT FOR TWO)" (1892) – HARRY DACRE
- B. Wheels + Motors
 - 1. The Rise of the Motorcar
 - 2. The Need for Speed
 - 3. LISTENING COMPANION 2: *SHORT RIDE IN A FAST MACHINE* (1986) – JOHN ADAMS
- C. The Romance of the Rails
 - 1. Love of Locomotion

2. The Little Engine That Could, Brazilian-Style
 3. LISTENING COMPANION 3: *BACHIANAS BRASILEIRAS NO. 2, W. 247, MVT. IV: "TOCCATA: O TRENZINHO DO CAIPIRA"* ("TOCCATA: THE LITTLE TRAIN OF CAIPIRA") (1930) – HEITOR VILLA-LOBOS
- D. Ways to Work
1. Transport for the Masses
 2. Making Maps Musical—the Title of “Take the ‘A’ Train”
 3. Rescued From a Wastebasket—the Background of “Take the ‘A’ Train”
 4. LISTENING COMPANION 4: “TAKE THE ‘A’ TRAIN” (1941) – BILLY STRAYHORN
- E. Transport by Water
1. Millenia of Watercraft
 2. Lifeboats
 3. LISTENING COMPANION 5: *THE PADSTOW LIFEBOAT, OP. 94* (1967) – MALCOLM ARNOLD; ARRANGED FOR CONCERT BAND BY RAY WOODFIELD
- III. JOURNEYS OF HOPE 28%
- A. Seeking Adventure (on Foot)
1. Nineteenth-Century Works on Walking and Wandering
 2. Fanny Mendelssohn Hensel
 3. LISTENING COMPANION 6: *SECHS LIEDER, OP. 1, NO. 2: “WANDERLIED”* (1846) – FANNY MENDELSSOHN HENSEL
- B. Seeking Adventure (on Wheels)
1. The Rhythm of the Open Road
 2. The Genesis of “Born to Be Wild”
 3. LISTENING COMPANION 7: “BORN TO BE WILD” (1968) – MARS BONFIRE (DENNIS EDMONTON)
- C. Journeys of Transformation
1. Songs about Finding Freedom
 2. The Background of Tracy Chapman's “Fast Car”
 3. LISTENING COMPANION 8: “FAST CAR” (1988) – TRACY CHAPMAN
- D. Crossing the Waves
1. By Paddle, By Sail
 2. The Age of Steam
 3. LISTENING COMPANION 9: *TITANIC, “THE LAUNCHING: THERE SHE IS / LOADING INVENTORY / THE LARGEST MOVING OBJECT”* (1997) – MAURY YESTON
- E. The Final Frontier
1. The Age of Flight
 2. Journey into Imagination
 3. LISTENING COMPANION 10: “STAR TREK (MAIN TITLE)” (1966) – ALEXANDER COURAGE
- IV. PERILOUS JOURNEYS 24%
- A. Marching Toward Fate
1. Marches and the Military
 2. Composing a “Meet Cute”—How *Symphonie fantastique* Came to Be

3. LISTENING COMPANION 11: *SYMPHONIE FANTASTIQUE*, OP. 14, MVT. IV:
“MARCH TO THE SCAFFOLD” (1830) – HECTOR BERLIOZ
- B. Riding Toward Fate
 1. Background of “Charlie Rutlage”
 2. LISTENING COMPANION 12: “CHARLIE RUTLAGE” (1920–21) – CHARLES IVES
- C. Driving Toward Fate
 1. Motors and Mortality
 2. LISTENING COMPANION 13: “BUS PLUNGE” (1983) – GUNNAR MADSEN AND RICHARD GREENE
- D. Flying Toward Fate
 1. The Northeast Blackout of 1965 and Air Travel
 2. LISTENING COMPANION 14: “747 (STRANGERS IN THE NIGHT)” (1980) – PETER BYFORD, STEVEN DAWSON, PETER GILL, GRAHAM OLIVER, AND PAUL QUINN

SCIENCE

An Introduction to Animal Behavior and Migration

- I. INTRODUCTION TO ANIMAL BEHAVIOR 15%
 - A. What Is an Animal, and What Is Behavior?
 - 1. The Definition of “Animal”
 - 2. The Diversity of Animals
 - 3. Behavior
 - 4. Ecology
 - 5. Taxonomy and the Kingdom of Animalia
 - a. Understanding Phylogenetic Trees
 - b. The First Animals
 - c. How Animals are Classified
 - 6. Survival of the Fittest
 - a. The Basics of Evolution
 - b. The Theory of Natural Selection
 - c. The Limitations of Evolution
 - d. The Evolution of Behavior
 - B. The History of Animal Behavior: Past to Present
 - 1. The Pioneers of Ethology
 - a. Charles Darwin
 - b. The “Fathers” of Ethology
 - c. Modern Animal Behavior Research
 - 2. Tinbergen’s Four Questions
 - a. Function (or Adaptation)
 - b. Evolution (or Phylogeny)
 - c. Causation (or Mechanism)
 - d. Development (or Ontology)
 - C. How Behavior is Measured and Studied
 - 1. Observational Studies
 - 2. Laboratory Studies
 - 3. Ethograms
 - 4. Using Genetics to Understand Behavior
 - a. Comparison of Structures

- II. THE BIOLOGY OF ANIMAL BEHAVIOR 25%
 - A. The Nervous System of Animals
 - 1. Vertebrate Animals
 - a. The Peripheral Nervous System
 - b. The Somatosensory Nervous System
 - c. The Autonomic Nervous System
 - d. The Central Nervous System
 - 2. The Nervous System of Invertebrate Animals
 - B. Hormones

1. What Is a Hormone?
2. What Do Hormones Do to the Body?
3. Stress
- C. How Animals Tell Time
 1. The Biology of the Internal Clock
 2. Daily Rhythms
 3. Seasonal Rhythms
- D. Fixed Versus Adaptive Behaviors
 1. Instinctual Behavior
 - a. The Heritability of Behavior
 2. Learned Behaviors
 - a. Nonassociative Learning
 - b. Associative Learning
 3. Complex Learning
 - a. Spatial Cognition
 - b. Social Learning
 4. How the Environment Changes Behavior
 - a. Epigenetic Effects on Behavior
 - b. Intergenerational Effects on Behavior

III. EXPRESSIONS OF BEHAVIOR

35%

- A. Foraging
 1. Methods of Foraging
 2. Foraging Theories
 - a. Optimal Foraging Theory
 - b. Evolutionary Game Theory
 3. Cognition and Feeding
 4. Homeostasis
- B. Communication
 1. Cues and Signals
 2. Body Language
 3. Birdsong
 4. Cultural Transmission
 5. Other forms of Communication
- C. Sexual Selection
 1. Mate Choice
 2. Direct and Indirect Benefits
 3. Alternative Explanations
- D. Predatory and Anti-Predatory Behavior
 1. How Animals Hunt
 2. Anti-Predator Adaptations
 3. The Evolutionary Arms Race of Behavior
- E. Social Behavior
 1. Within-Species Social Behavior
 2. Between-Species Social Behavior
 3. Solitary Animals

- F. Emotions and Personality
 - 1. The Emotional State of Animals
 - 2. What We Know About Animal Personalities
- G. The Effects of Domestication on Animal Behavior
 - 1. Taming vs. Domestication
 - 2. Selective Breeding
 - 3. Human Effects on Animal Behavior

IV. MIGRATORY BEHAVIOR 25%

- A. Why Migrate?
 - 1. Migration Behavior
 - 2. The Benefits of Migration
 - 3. The Downsides to Migration
- B. Navigational Cues
 - 1. Earth's Magnetic Field
 - 2. Seasonality and Time
 - 3. Olfactory Cues
- C. How Animals Migrate
 - 1. Migration over Land
 - 2. Migration by Sea
 - 3. Migration through the Air
- D. From Birth to Migration
 - 1. Genetic Predispositions to Migration
 - 2. Learned Migratory Behaviors
- E. Anthropogenic Effects on Migration
 - 1. Climate Change
 - 2. Pollution
 - 3. Urbanization and Habitat Destruction
 - 4. Invasive Species

SOCIAL SCIENCE

An Introduction to Human Geography and Migration

- I. THINKING GEOGRAPHICALLY 10%
 - A. What Is Human Geography?
 - B. Maps
 - 1. Types of Maps
 - 2. Distance and Location Relationships
 - 3. Map Scale
 - 4. Projection and Distortion
 - C. Geographic Data
 - 1. Geographic Data Collection Methods and Technologies
 - 2. Types of Geographic Data
 - 3. The Power of Geographic Data
 - D. Spatial Concepts
 - E. Human-Environmental Interaction
 - F. Scales of Analysis
 - G. Regional Analysis

- II. CULTURAL PATTERNS AND PROCESSES 10%
 - A. Introduction to Culture
 - B. Cultural Landscapes
 - C. Cultural Patterns
 - 1. Language
 - 2. Religion
 - 3. Ethnicity
 - D. Types of Diffusion
 - E. Historical Causes of Diffusion
 - F. The Effects of Diffusion

- III. POPULATION PATTERNS AND PROCESSES 20%
 - A. Population Distribution
 - B. Consequences of Population Distribution
 - C. Population Composition
 - D. Population Dynamics
 - 1. Total Fertility Rate
 - 2. Crude Birth Rate
 - 3. Crude Death Rate
 - 4. Natural Increase Rate and Doubling Time
 - 5. Net Migration
 - 6. Push and Pull Factors
 - 7. Types of Migration
 - E. Models and Population Dynamics
 - 1. The Demographic Transition Model (DTM)

- 2. The Epidemiological Transition Model (ETM)
- F. Malthusian Theory
 - 1. The Neo-Malthusian Movement
 - 2. Cornucopians
- G. Population Policies
- H. Women and Demographic Change
- I. Aging Populations

IV. MIGRATION PATTERNS AND PROCESSES 30%

- A. Defining Migration
 - 1. Migration vs Mobility
 - 2. In-migration and Out-migration
 - 3. Migration Streams
 - 4. Directional Bias
- B. Types of Migration
 - 1. Voluntary vs Involuntary Migration
 - 2. Long- vs Short-Distance Moves
 - 3. Temporary vs Permanent Migration
 - 4. International vs Internal Migration
 - 5. Transnational Migration
- C. The Migration Process
 - 1. Migration Decision Making
 - 2. Stepwise Migration
 - 3. Chain Migration
 - 4. Repeat Migration
 - 5. Seasonal Migration
- D. The Characteristics of Migration
 - 1. Ravenstein's Laws of Migration
 - 2. The Migration Age Profile
 - 3. Migration Selectivity
 - 4. The Mobility Transition Model
- E. Causes of Migration
- F. Theories on the Causes of Migration
 - 1. The Macroadjustment Model
 - 2. The Human Capital Model
 - 3. The New Economics of Labor Migration (NELM)
 - 4. The Dual Labor Market Theory
 - 5. The Life Course Approach to Migration
 - 6. The Push-Pull Theory of Migration
 - a. Examples of Push Factors
 - b. Examples of Pull Factors
 - c. Intervening Obstacles
- G. Internal Migration
 - 1. Migration Rates and Culture
 - 2. Intraurban Mobility
- H. Refugees and Internally Displaced Persons (IDPs)

1. Refugees
2. Asylum Seekers and Asylees
3. Internally Displaced Persons (IDPs)
4. Global Trends in Forcibly Displaced People
5. Refugee Settlements
 - a. Voluntary Repatriation
 - b. Settlement in the Country of First Asylum
 - c. Resettlement in a Third Country
6. Historical Overview of U.S. Refugee Policy

V. MIGRATION CASE STUDIES 30%

- A. Case Study: Westward Expansion in the United States
 1. The Colonial Era
 2. Manifest Destiny
 3. The Louisiana Purchase
 4. The Lewis and Clark Expedition
 5. The Mexican-American War and the Annexation of Texas
 6. The Gold Rush
 7. The Displacement of Indigenous Peoples
 8. The End of the Westward Expansion Era
- B. Case Study: Historical Waves of Immigration to the United States
 1. Ellis Island
 2. Pre-1880: Mostly Western and Northern European Immigrants
 3. 1880–1960: Eastern and Southern European Immigrants
 4. After the Mid-1960s: Latin American and Asian Immigrants
- C. Case Study: The Great Migration of African Americans
 1. The Reversal of the Great Migration
- D. Case Study: Displaced Persons (DPs) in Post-World War II Europe
 1. Background
 2. The United Nations Relief and Rehabilitation Administration (UNRRA)
 3. The Yalta Conference and the Halle Agreement
 4. Postwar Repatriation of Displaced Persons
 - a. Displaced Persons Camps and the Harrison Report
 5. The “Last Million”
 6. The Soviet Union and Forced Repatriation
 7. UN Involvement
- E. Case Study: The Partition of India and Mass Migration
 1. Background: The Leadup to Partition
 2. The Trauma of Partition, 1947–55
- F. Case Study: Cuban Migration to the United States
 1. The Golden Exiles, 1959–62
 2. The Freedom Flights, 1965–73
 3. The Mariel Exodus of 1980
 4. The Balsero Crisis of 1994
 5. The “Wet Foot, Dry Foot” Policy
 6. The Post-1995 Wave

- G. Case Study: Guestworker Programs
 - 1. The Bracero Program in the United States
 - 2. Guestworker Programs in Postwar Europe
- H. Case Study: Internal Migration in China
- I. Case Study: Visas and the Schengen Area
 - 1. Visas for International Travel
 - 2. Visa-Free Entry
 - 3. The Schengen Area