

# ART

## *An Introduction to the Art of the 1960s*

- 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. SETTING THE STAGE FOR THE ART OF THE 1960s 16%
- A. Introducing the Sixties
  - B. Rewind: An Overview of Art in Europe and America after World War II
  - C. SELECTED ARTWORK: JASPER JOHNS, *FLAG*, 1954–55
    - 1. Johns' Early Life and Career
    - 2. *Flag*: Analysis
    - 3. Johns' Continued Development and Influence
  - D. SELECTED ARTWORK: ALLAN KAPROW, *18 HAPPENINGS IN 6 PARTS*, 1959
    - 1. Kaprow's Early Career
    - 2. Kaprow's Writing on Jackson Pollock
    - 3. *18 Happenings in 6 Parts*: Analysis
    - 4. Kaprow's Influence
- III. EARLY SIXTIES: MELDING ART AND LIFE 16%
- A. Melding Art and Life
  - B. SELECTED ARTWORK: ROBERT RAUSCHENBERG, *BLACK MARKET*, 1961
    - 1. Rauschenberg's Early Career
    - 2. *Black Market*: Analysis
    - 3. Larger Context: Interactivity, Participation, and Collaboration
  - C. SELECTED ARTWORK: CLAES OLDENBURG, *FLOOR CAKE*, 1962
    - 1. Oldenburg's Early Career
    - 2. *Floor Cake*: Analysis
  - D. SELECTED ARTWORK: ANDY WARHOL, *MARILYN DIPTYCH*, 1962
    - 1. Warhol's Early Career
    - 2. Warhol's Factory
    - 3. *Marilyn Diptych*: Analysis
  - E. SELECTED ARTWORK: NAM JUNE PAIK, *ZEN FOR TV*, 1963, 1976 VERSION
    - 1. Paik's Early Career
    - 2. Larger Context: Fluxus in West Germany
    - 3. *Zen for TV*: Analysis
- IV. THE SIXTIES: ART AND POLITICS 16%
- A. The Political Context of the 1960s in Europe and the U.S.
  - B. SELECTED ARTWORK: Edward Kienholz, *The Portable War Memorial*, 1968
    - 1. Kienholz's Early Career
    - 2. Larger Context: From Assemblage to Tableaux
    - 3. *The Portable War Memorial*: Analysis
  - C. SELECTED ARTWORK: MARTHA ROSLER, *RED STRIPE KITCHEN*, FROM THE SERIES "HOUSE BEAUTIFUL: BRINGING THE WAR HOME," c. 1967–72
    - 1. Rosler's Career
    - 2. Historical Development of Photomontage
    - 3. *Red Stripe Kitchen*: Analysis
  - D. SELECTED ARTWORK: FAITH RINGGOLD, *AMERICAN PEOPLE SERIES #20: DIE*, 1967

1. Ringgold's Career
2. *American People Series #20: Die*: Analysis
3. Reception of African-American Art in the U.S. in the '60s and '70s

V. THE SIXTIES: MINIMALISM AND CONCEPTUALISM 16%

- A. SELECTED WORK: AD REINHARDT, *ABSTRACT PAINTING*, 1960–61
  1. Reinhardt's Early Career
  2. *Abstract Painting*: Analysis
  3. From the Monochrome to Minimalism
- B. SELECTED WORK: DONALD JUDD, *UNTITLED (STACK)*, 1967
  1. Judd's Early Career
  2. Judd's Essay "Specific Objects" and the Debate Over Minimalism
  3. *Untitled (Stack)*: Analysis
  4. Larger Context: Fabrication and the Artist's Hand
- C. SELECTED WORK: SOL LEWITT, *WALL DRAWING I*, 1968
  1. LeWitt's Early Career
  2. *Wall Drawing I*: Analysis
  3. Larger Context: Minimalism's Relationship to Architecture
- D. SELECTED WORK: JOSEPH KOSUTH, *ONE AND THREE CHAIRS*, 1965
  1. Kosuth's Early Career
  2. "Art After Philosophy"
  3. *One and Three Chairs*: Analysis
- E. SELECTED WORK: EDWARD RUSCHA, *EVERY BUILDING ON THE SUNSET STRIP*, 1966
  1. Ruscha's Early Career
  2. *Every Building on the Sunset Strip*: Analysis
  3. Larger Context: West Coast Conceptualism
- F. SELECTED WORK: HANS HAACKE, *NEWS*, 1969/2008
  1. Haacke's Early Career
  2. *News*: Analysis
  3. The Development of Institutional Critique

VI. THE SIXTIES: POST-MINIMALISM 16%

- A. SELECTED WORK: EVA HESSE, *REPETITION NINETEEN III*, 1968
  1. Hesse's Career
  2. Larger Context: From Minimalism to Post-Minimalism
  3. *Repetition Nineteen III*: Analysis
- B. SELECTED WORK: RICHARD SERRA, *GUTTER CORNER SPLASH: NIGHT SHIFT* (FORMERLY TITLED *SPLASH PIECE: CASTING*), 1969/1995
  1. Serra's Early Career
  2. *Gutter Corner Splash: Night Shift* (Formerly Titled *Splash Piece: Casting*): Analysis
  3. Larger Context: "Process" Art and the Reaction to Minimalism
- C. SELECTED WORK: MICHAEL HEIZER, *DOUBLE NEGATIVE*, 1969–70
  1. Heizer's Early Work
  2. From Minimalism to Land Art
  3. *Double Negative*: Analysis
  4. Documenting Land Art

# ECONOMICS

## *An Introduction to Economics and the U.S. Economy in the 1960s*

- 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 U.S. ECONOMY IN THE 1960S

20%

- A. Setting the Stage: The Kennedy Administration (1960–63)
- B. President Johnson's Great Society and the War on Poverty

1. The 1964 Civil Rights Act
  2. Race Riots
  3. The “War on Poverty”
  4. The Impact of the “War on Poverty”
- C. Johnson’s Fiscal Policy
- D. Monetary Policy in the 1960s
- E. Productivity in the 1960s
- F. The Economic Impact of the Vietnam War
1. Defense Spending
  2. Fiscal Policy and the Vietnam War
- G. The Expansion of Government in the 1960s

## LITERATURE

### *An Introduction to the Literature of the 1960s*

- 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. *ROSENCRANTZ AND GUILDENSTERN ARE DEAD* BY TOM STOPPARD 40%
  - A. Overview of Tom Stoppard's Life and Work
  - B. The Origin of Rosencrantz and Guildenstern in Shakespeare's *Hamlet*
  - C. Literary Forebears: Realism, Modernism, and Postmodernism
    - 1. The Influence of Realism
    - 2. The Influence of Modernism
    - 3. The Influence of Postmodernism
      - a. John Barth and Jorge Luis Borges
      - b. Italo Calvino and other influences on Postmodernist literature
      - c. Postmodernism and parody
      - d. Postmodernism and the chaos of life and language
      - e. Postmodernism and "play"
      - f. Meta-theater
  - D. Atmospheric Conditions in the 1960s
    - 1. The Influence of Freudian Analysis and Existentialism
    - 2. Stoppard and the "Theater of the Absurd"
  - E. What's *Godot* Got to Do with It?
  - F. Stoppard and Pirandello
    - 1. Pirandello's *Enrico IV*
    - 2. Pirandello's *Six Characters in Search of an Author*
  - G. Jean Rhys's *Wide Sargasso Sea*
  - H. Act One Reading Guide: In Place with No Visible Character
    - 1. Act One: Short Summary
    - 2. Act One: Detailed Review
  - I. Act Two Reading Guide: Playing at Death
    - 1. Act Two: Short Summary
    - 2. Act Two: Detailed Review
  - J. Act Three Reading Guide: "You Can't Not-Be on a Boat"
    - 1. Act Three: Short Summary
    - 2. Act Three: Detailed Review
  - K. *Rosencrantz Fifty Years Later*



### III. SELECTED SHORTER WORKS OF LITERATURE

45%

- A. Donald Barthelme's "The Phantom of the Opera's Friend"
  - 1. Donald Barthelme: Life and Work
  - 2. SELECTED WORK: "THE PHANTOM OF THE OPERA'S FRIEND" BY DONALD BARTHELME
  - 3. "The Phantom of the Opera's Friend": Analysis
- B. "Letter from a Birmingham Jail": An Enduring Plea for Action against Injustice
  - 1. The Life of Dr. Martin Luther King Jr.
  - 2. The Birmingham Campaign
  - 3. Context of the "Letter"
  - 4. SELECTED WORK: "LETTER FROM A BIRMINGHAM JAIL" BY DR. MARTIN LUTHER KING JR.
  - 5. The "Letter": Audience, *Ethos*, *Pathos*, and *Logos*
  - 6. *Kairos* and *Telos*
- C. Toni Cade Bambara's "The Lesson"
  - 1. Toni Cade Bambara: Life and Work
  - 2. SELECTED WORK "THE LESSON" BY TONI CADE BAMBARA
  - 3. "The Lesson": Analysis
- D. Etheridge Knight: "The Idea of Ancestry"
  - 1. Etheridge Knight: Life and Work
  - 2. SELECTED WORK: "THE IDEA OF ANCESTRY" BY ETHERIDGE KNIGHT
  - 3. "The Idea of Ancestry": Analysis
- E. Three Early Songs of Bob Dylan
  - 1. Bob Dylan: Life and Work
  - 2. SELECTED WORK: "A HARD RAIN'S A-GONNA FALL" BY BOB DYLAN
  - 3. "A Hard Rain's A' Gonna Fall": Analysis
  - 4. SELECTED WORK: "MASTERS OF WAR" BY BOB DYLAN
  - 5. "Masters Of War": Analysis
  - 6. SELECTED WORK: "THE LONESOME DEATH OF HATTIE CARROLL" BY BOB DYLAN
  - 7. "The Lonesome Death Of Hattie Carroll": Analysis
- F. Joan Didion on Joan Baez: "Where the Kissing Never Stops"
  - 1. New Journalism
  - 2. Joan Didion: Life and Work
  - 3. SELECTED WORK: "WHERE THE KISSING NEVER STOPS" BY JOAN DIDION
  - 4. "Where the Kissing Never Stops": Analysis
- G. Tim O'Brien: "Ambush"
  - 1. Tim O'Brien: Life and Work
  - 2. SELECTED WORK: "AMBUSH" FROM *THE THINGS THEY CARRIED* BY TIM O'BRIEN
  - 3. Tim O'Brien's *The Things They Carried*
  - 4. Tim O'Brien's "Ambush": Analysis

# MATHEMATICS

## *Overview of Permutations and Combinations, Algebra, and Statistics*

### I. OVERVIEW OF PERMUTATIONS AND COMBINATIONS 10%

- A. Multiplication Principle
- B. Permutations
- C. Combinations

### II. ALGEBRA 40%

- A. Sequences and Series
  - 1. Arithmetic and Geometric Sequences
  - 2. Arithmetic and Geometric Series
  - 3. Sigma Notation
- B. Polynomials
  - 1. Adding and Subtracting
  - 2. Multiplying
- C. Binomial Expansion Theorem
- D. Compound Interest
  - 1. Investing and Borrowing
  - 2. Annuities and Loans
- E. Euler's Constant

### III. STATISTICS 50%

- A. Descriptive Statistics
  - 1. Mean, Median, and Mode
  - 2. Range, Quartiles, and IQR
- B. Measures of Variation
  - 1. Variance
  - 2. Standard Deviation
  - 3. Z-score

C. Basic Probability

1. Independent
2. Dependent

D. Probability Distributions

1. Expected Value
2. Variance and Standard Deviation

E. The Binomial Distribution

F. The Normal Distribution

# MUSIC

## *The 1960s: A Transformational Decade 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 partials
  - 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; example, using scale degrees
  - 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 meter
  - 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. ONE BRIEF SHINING MOMENT—THE EARLY 1960s 25%
- A. Camelot and Kennedy
    1. “The Torch Has Been Passed”
    2. Television—Cause and Effect
  - B. Setting the Stage—Traditionalists and Iconoclasts: Moving from 1959 into 1960

1. Musical Theatre: The End of an Era—*The Sound of Music* and the Death of Oscar Hammerstein
  2. Broadway Enters the Modern Era
  3. Classical Music: Something Old and Something New
  4. LISTENING EXAMPLE 1: *THRENODY FOR THE VICTIMS OF HIROSHIMA* (1960) KRZYSZTOF PENDERECKI
  5. Jazz: Many Different Streams
  6. LISTENING EXAMPLE 2: *FREE JAZZ* (1960)—ORNETTE COLEMAN
  7. Rock and Roll: At Home on AM Radio
  8. Film Music: *Psycho*
- C. The Times They Are A-Changin’—1961–63
1. Classical Music: Masterpieces, Social Commentary, and Innovation
  2. LISTENING EXAMPLE 3: “REQUIEM AETERNAM,” *WAR REQUIEM* (1963)—BENJAMIN BRITTEN
  3. LISTENING EXAMPLE 4: “OUT THERE” AND “DIES IRAE,” *WAR REQUIEM* (1963)—BENJAMIN BRITTEN
  4. Jazz: Looking for an Audience
  5. Film Music
  6. Musical Theatre: Something for Everyone
  7. Rock and Roll, Folk, and Folk/Rock Make a Splash
  8. Hitsville, U.S.A.: Motown
  9. Phil Spector’s Wall of Sound
  10. Everybody’s Gone Surfin’: The Emergence of Surf Rock
  11. Robert Zimmerman
  12. Meet The Beatles
  13. The Assassination of John F. Kennedy

III. “A CHANGE IS GONNA COME”: THE HEART OF THE 1960s 30%

- A. The British Invasion
  1. Beatlemania
  2. Chart Toppers
  3. The Rolling Stones
- B. Innovations in Classical Music
  1. *Philomel*
  2. György Ligeti
  3. *St. Luke Passion*
  4. George Crumb
  5. Terry Riley
  6. LISTENING EXAMPLE 5: *IN C* (1964)—TERRY RILEY
  7. Steve Reich
  8. LISTENING EXAMPLE 6: “IT’S GONNA RAIN” (1965)—STEVE REICH
  9. Minimalism Meets Rock and Roll
  10. Return to Tonality
- C. The Dawning of the Age of Aquarius

1. LISTENING EXAMPLE 7: “AQUARIUS” FROM *HAIR* (1967)—  
GALT MCDERMOT
- D. Jazz: Old and New
  1. *A Love Supreme*
  2. LISTENING EXAMPLE 8: *A LOVE SUPREME* (1964)—JOHN  
COLTRANE
- E. Rocking the World of Film
  1. The Beatles
  2. The Rockumentary
- F. The Television Scene
  1. The Comics Come to Life: *Batman*
  2. The Animated Beatles
  3. Crass Commercialism—The Monkees
- G. Eve of Destruction
  1. Bob Dylan Hits Number One
  2. LISTENING EXAMPLE 9: “MR. TAMBOURINE MAN” (1965)—  
THE BYRDS/BOB DYLAN
  3. “Like a Rolling Stone”
  4. “Satisfaction”
  5. Music Criticism
  6. Motown and Aretha Franklin (But not Together!)
  7. LISTENING EXAMPLE 10: “STOP! IN THE NAME OF LOVE”  
(1965)—DIANA ROSS AND THE SUPREMES/HOLLAND-DOZIER-HOLLAND
  8. “Good Vibrations”—The Beach Boys
  9. FM, the Rise of the Album, and the Counterculture
  10. Debuts: Cream, Pink Floyd, Van Morrison
  11. Shea Stadium, *Rubber Soul*, and *Revolver*
  12. 1967—The Summer of Love (and Drugs): Turn On, Tune In, Drop Out
  13. Monterey International Pop Festival
  14. LISTENING EXAMPLE 11: “SATISFACTION” (1967)—OTIS  
REDDING/JAGGER AND RICHARDS
  15. The Beatles’ *Sgt. Pepper*

IV. “I READ THE NEWS TODAY, OH BOY”—THE END OF THE 1960s 25%

- A. The Prague Spring: Karel Husa—*Music for Prague* 1968
- B. Apocalyptic Visions—*2001: A Space Odyssey*
- C. A Year of Turmoil
  - 1. The Assassination of Martin Luther King Jr.
  - 2. LISTENING EXAMPLE 12: *SINFONIA*, MVT. III, “IN RUHIG FLIESSENDER BEWEGUNG” (1968)—LUCIANO BERIO
  - 3. Music Responds to the Assassination of RFK
  - 4. Riots in the Streets: 1968 Democratic Convention
  - 5. Drugs and Rock
  - 6. Helter Skelter and Charles Manson
- D. “Let It Be”: The Beatles, Eastern Philosophy, and the Peace Movement
- E. Beginnings and Endings
  - 1. The Synthesizer: Wendy Carlos and Robert Moog
  - 2. Leonard Bernstein Steps Down
  - 3. The Birth of Jazz Fusion
  - 4. LISTENING EXAMPLE 13: “IN A SILENT WAY” (1969)—MILES DAVIS
  - 5. The Messiah Is Coming: Andrew Lloyd Webber
  - 6. Rock and Roll Beginnings and Endings
- F. The Festivals
  - 1. Newport Jazz Festival
  - 2. Woodstock
  - 3. LISTENING EXAMPLE 14: “WHITE RABBIT” (1967)—JEFFERSON AIRPLANE
  - 4. Jimi Hendrix at Woodstock
  - 5. Altamont
- G. Postlude—Music of the Early 1970s

*NOTE TO STUDENTS: If one were to create an ideal compilation of music from the 1960s, it would surely include recordings by Bob Dylan, The Beatles, the Rolling Stones, the Beach Boys, and Jimi Hendrix, among others. Unfortunately, it is exceptionally difficult and prohibitively expensive to license the music of these iconic artists. Despite sincere and prolonged efforts, USAD was not able to license tracks by these musicians for use on the listening CD. (In some cases, it was feasible to license cover versions, such as the Byrds’ cover of Dylan’s “Mr. Tambourine Man” and Otis Redding’s cover of the Rolling Stones’ “Satisfaction.”) All of these artists made significant contributions to the music of the 1960s, and they and their works are discussed in the text of the resource guide. We hope that students will find time to extend their exploration of the music of the 1960s beyond the scope of the resource guide and the companion CD by listening to original recordings by these artists, many of which are available online. However, only excerpts from the fourteen tracks on the USAD Music CD will be included on the listening portion of the music test.*



## SCIENCE

### *An Introduction to Laser Technology and Its Applications*

- I. LIGHT 15%
  - A. Properties of Light
    - 1. Waves
    - 2. Wave Properties
    - 3. Electromagnetic Waves
    - 4. The Speed of Light
    - 5. The Electromagnetic Spectrum
    - 6. Antennas and Radio Waves
    - 7. Transparent vs. Opaque Materials
  - B. Visible Light and Color
    - 1. The Visible Spectrum
    - 2. Selective Absorption and Reflection
    - 3. Selective Transmission
    - 4. Blue Skies and Red Sunsets
  
- II. OPTICS 30%
  - A. Geometric Optics
    - 1. The Ray Approximation
    - 2. Reflection
    - 3. The Law of Reflection
      - a. Specular and diffuse reflection
    - 4. Refraction
      - a. The law of refraction
    - 5. Mirages
    - 6. Dispersion
    - 7. Rainbows
    - 8. Total internal reflection
      - a. Fiber-optics
  - B. Mirrors and Lenses
    - 1. Plane Mirrors
    - 2. Concave and Convex Mirrors
      - a. Concave mirrors
      - b. Convex mirrors
    - 3. Lenses
      - a. Converging lenses
      - b. Diverging lenses
      - c. Spherical and chromatic aberration
  - C. Wave Optics
    - 1. Huygens' Principle
    - 2. Diffraction
    - 3. Interference
      - a. Superposition

- b. Double slit interference
- c. Diffraction gratings
- d. Thin-film interference
- 4. Polarization
- D. Optical Instruments
  - 1. Simple Magnifier
  - 2. Microscopes
  - 3. Telescopes

### III. LASERS 35%

- A. Light Emission and Absorption
  - 1. The Atom
  - 2. Quantization
  - 3. Photons
  - 4. The Bohr Model
  - 5. Atomic Excitation and Emission
  - 6. Emission Spectra
  - 7. Incandescence
  - 8. Absorption Spectra
  - 9. Fluorescence
  - 10. Phosphorescence
  - 11. Lamps
    - a. Incandescent lamps
    - b. Fluorescent lamps and CFLs
    - c. Light-emitting diodes
- B. Lasers
  - 1. Laser Operation
    - a. Stimulated emission
    - b. Population inversion
    - c. Energy levels
    - d. Optical cavity
  - 2. Properties of Laser Light
    - a. Monochromatic
    - b. Directional
    - c. Coherent
  - 3. Types of Lasers
    - a. Gas lasers
    - b. Solid-state lasers
    - c. Semiconductor diode lasers
- C. History of the Laser
  - 1. 1900–50: Early Foundations
  - 2. Early 1950s: Charles Townes and the Maser
  - 3. Late 1950s: Laser Conceived
  - 4. 1960s: The Race to Build the Laser
  - 5. 1970s–Present

IV. APPLICATIONS OF LASERS 20%

A. Scientific Applications

1. Laser Spectroscopy
2. Confocal Laser Scanning Microscopy
3. Manipulating Tiny Objects
  - a. Optical tweezers
  - b. Laser cooling
  - c. Atomic clocks
4. Nuclear Fusion

B. Medical Applications

1. Laser Surgery
  - a. Refractive eye surgery
2. Laser Dermatology
3. Laser Dentistry

C. Industrial Applications

1. Laser Drilling
2. Laser Cutting
3. Laser Beam Welding
4. Laser Marking, Engraving, and Etching
5. Photolithography
6. Stereolithography

D. Other Applications

1. Barcode Readers
2. Laser Pointers
3. Laser Printers
4. Optical Discs: CDs, DVDs, and Others
5. Holography

## SOCIAL SCIENCE

### *The 1960s: A Transformational Decade*

- I. THE DAYS OF CAMELOT 30%
- A. America in the 1950s: The Origins of Transformation
1. Prosperity and Liberalism
    - a. Legacies of the New Deal state
  2. The Fruits of War
  3. The Postwar Economy
  4. A Consumers' Republic
    - a. The suburban middle class
  5. Conformity and Discontent
    - a. The vital center
    - b. Suburban womanhood
    - c. Youth culture and sexuality
    - d. The other America: African Americans, Latinos, and the poor
  6. Eisenhower's Cold War
    - a. Massive retaliation
    - b. Stalling in the arms race?
    - c. The military industrial state
- B. A New Frontier: Kennedy and the World
1. The rise of John F. Kennedy
    - a. Nixon vs. Kennedy
    - b. A Catholic president
    - c. The inauguration of John F. Kennedy
    - d. Kennedy and the image of vitality
  2. Kennedy and the Cold War
    - a. Racing the Soviets to space
    - b. The Berlin Wall
    - c. Nuclear Proliferation in Europe
    - d. The Bay of Pigs invasion
    - e. The Cuban Missile Crisis
    - f. The turn toward non-proliferation
  3. A New Approach to the Developing World
    - a. America volunteers: The Peace Corps
    - b. Kennedy and the African post-colonial movement
    - c. An Alliance for Progress: Kennedy and Latin America
    - d. Flexible response and counterinsurgency
    - e. Kennedy and Indochina: stepping into the quagmire
- C. New Frontiers at Home
1. Civil Rights: From the Courts, to the Streets, to the Ballot Box
    - a. A lackluster leader in the White House
    - b. Going public: the sit-ins of 1960

- c. Hitting the road: the Freedom Riders
- d. Blood on the pavement: facing Bull Connor in Birmingham
- e. White backlash: Civil Rights opposition
- f. Still a dream: The March for Jobs and Freedom
- 2. Domestic Policies: Economic Growth
  - a. Economic policy: Keynesian fine-tuning
  - b. Kennedy's domestic reform efforts
- 3. The Assassination of John F. Kennedy
  - a. November 22, 1963
  - b. The Warren Commission

## II. THE APEX OF AMERICAN LIBERALISM

30%

### A. Indomitable Will: The Johnson Presidency

- 1. President Johnson
  - a. Texas roots
  - b. Mastering the ropes of D.C.
  - c. Dreaming of a *new* New Deal
  - d. The Johnson Treatment
  - e. A vice president in the wings
- 2. Legislating the Kennedy Legacy
  - a. The Kennedy-Johnson tax cut
  - b. The Civil Rights Act
  - c. Women and the Civil Rights Act
  - d. The election of 1964: Johnson vs. Goldwater
- 3. The Great Society
  - a. The War on Poverty
  - b. Education
  - c. Housing and urban development
  - d. Medical care
  - e. Immigration reform
  - f. The 1965 Voting Rights Act
- 4. The Warren Court
  - a. Civil rights
  - b. The rights of the accused
  - c. Preserving democracy

### B. From Civil Rights to Black Power

- 1. The Limits of Nonviolent Resistance
  - a. The Mississippi Freedom Summer
  - b. Dead-end in Selma
  - c. The black separatism of Malcolm X
- 2. The Urban Crisis
  - a. The black urban experience
  - b. The Watts Riots, August 1965
  - c. Ghettos in flames nationwide
- 3. Black Power
  - a. Stokely Carmichael's Black Power

- b. The Black Panther Party for Self-Defense
- c. Black pride in culture and society
- d. Black Power's global influence

### III. THE CENTER DOES NOT HOLD

20%

- A. Social and Cultural Dissent in the Early 1960s
  - 1. The New Left—and Right
    - a. Students for a Democratic Society
    - b. The Berkeley Free Speech Movement
    - c. Young Americans for Freedom
  - 2. The Sexual Revolution and the Women's Movement
    - a. Birth control
    - b. Cohabitation
    - c. The liberal women's movement and politics
- B. The United States and the World, 1964–68
  - 1. Vexing Vietnam: The Quagmire Deepens
    - a. The Gulf of Tonkin Resolution
    - b. The policy of gradual escalation
    - c. The best and the brightest: managing a war of annihilation
    - d. The draft: race and class
    - e. The America soldier in Vietnam
    - f. The Tet Offensive and its political fallout
    - g. My Lai
  - 2. The United States, Europe, and the Developing World
    - a. The Dominican Republic
    - b. Israel and the Six-Day War of 1967
    - c. The long road to détente: U.S.-Soviet relations
  - 3. The Antiwar Movement
    - a. Teach-ins and campus protests
    - b. Catholic priests and draft resisters
    - c. Opposition to the war comes to Congress
    - d. Vietnam topples Johnson
    - e. Student protests and antiwar sentiments around the world
- C. Social and Cultural Dissent in the Late 1960s
  - 1. Counterculture: Sex, Drugs, and Rock 'n' Roll
    - a. "Dropping out:" youth culture and drugs
    - b. The British Invasion: from San Francisco to Woodstock
    - c. Flower children: communes and alternative societies
  - 2. Modern Environmentalism
    - a. *Silent Spring*
    - b. *The Population Bomb*
    - c. Earth Day
  - 3. The Rights Revolution
    - a. The Chicano Movement
    - b. The American Indian Movement
  - 4. Second Wave Feminism

- a. NOW
  - b. Women's Liberation Emerges
  - c. The Resurgence of the Equal Rights Amendment
5. The Stonewall Riots and the Birth of Gay Pride

IV. THE RISE AND UNDOING OF A LAW-AND-ORDER PRESIDENT 20%

- A. The Age of Aquarius
  - 1. 1968: The Conflict Erupts
    - a. The crime of Memphis
    - b. Another Kennedy assassination
    - c. Police-run riot: The Democratic National Convention
    - d. The Chicago Seven
  - 2. The Election of Richard Nixon
    - a. The Richard Nixon the Cold War made
    - b. Lessons in media and resentment
    - c. The election of 1968
- B. The Nixon Presidency
  - 1. Nixon at home: the accidental liberal
    - a. Welfare and the Great Society
    - b. The environment, workers' safety, and consumer protection
    - c. Civil rights and affirmative action
    - d. Roots of stagnation: the seeds of the seventies
  - 2. Nixon's Strategy of Vietnamization
    - a. Nixon and Kissinger: traitors or clever politicians?
    - b. Troop withdrawals and the end of the draft
    - c. The invasion of Cambodia
    - d. Kent State and Jackson State
    - e. The Pentagon Papers
    - f. Vietnam soldiers and veterans against the war
  - 3. Nixon's Foreign Policy
    - a. Nixon's recognition of Beijing
    - b. Détente with Moscow
    - c. The Nixon Doctrine in South America
  - 4. Nixon's Landslide and His Path toward Resignation
    - a. Nixon's bombing campaigns: "peace is at hand"
    - b. The election of 1972
    - c. The Watergate break-in: the making of a national crisis