The Paideia School
Bible 12
Apologetics

Biblical Principles

1. God speaks propositional truth to man through the Bible. The Bible is inspired by the Holy Spirit, is inerrant in all that it affirms, and is the Christian's infallible guide to belief and behavior.
2. Since God has used men to speak His message to mankind, there is legitimacy to the Bible-teaching ministry, including hermeneutics, exegesis, and apologetics, among believers.
3. Scripture can have only one "true" meaning because of the unity of the mind of God and the corresponding nature of truth. A passage can have only one correct interpretation, yet may have several applications to various persons' lives.
4. The Scriptures themselves acknowledge that they contain "mysteries" and passages that are difficult to understand.
5. God intends that study of, and meditation on, the Scriptures should help students to grow and develop their personalities in wholeness.

Bible Department Goals

1. Gain a working knowledge of the Bible, thus attaining fluency with Biblical principles and precepts, in order to forge a Biblical worldview that will form the foundation for all life experiences and endeavors.
2. Spend the majority of class and study time devoted to the subject of the Bible primarily in the Biblical text itself, with scholarly support from reference works.
3. Train in sound principles of hermeneutics, rightly dividing the Word of Truth.
4. Maintain the unity of the Spirit in the bond of peace by adhering to The Paideia School's Statement of Faith and to its Secondary Doctrine Policy. We do not advocate denominational distinctives, yet allow doctrinal discussion and debate for the benefits of mutual understanding and improving rhetorical skill.
5. Integrate knowledge and skills from other disciplines and encourage the application of Biblical truth as the proper framework for discerning truth and error in other subjects.
6. Teach the Bible with a blend and balance of academic rigor and pastoral concern. We develop virtuous scholars who study the Word and submit to it.
7. Engage/Present key themes and concepts of the course in cogent/elegant/persuasive verbal and written form, based on original research and analysis/reflection.

Course Goals

Students will:

1. Recognize and express the benefits of, and the need for, apologetics.

2. Identify and analyze major types and systems of apologetics.
3. Compare and contrast various dominant and extant worldviews.
4. Construct and articulate a Biblical life and worldview.
5. Cultivate the ability to refute unbelief in its various forms.
6. Balance personal devotion and rigorous apologetic skill.

Course Objectives

First Quarter

- Definition of apologetics and its basis in Scripture.
- The values of apologetics.
  - In evangelizing unbelievers.
  - In edifying believers.
- The need to balance personal devotion/intellectual depth by the apologist.
- Comparing presuppositional and evidential apologetics.

Second Quarter

- Constructing a Biblical apologetic from Proverbs 26:4-5.
  - The necessary discovery of unstated assumptions.
  - The inescapable authority of right logic.
  - The compelling power of genuine compassion.
- Philosophy and apologetics:
  - Metaphysical issues: what is "truth."
  - Epistemological issues: how does the Christian "know" truth.

Third Quarter

- Components of a worldview.
- Critique of the ideal of "neutral" thought.
- Tests of a worldview.
  - Logical coherence.
  - Correspondence with reality.
  - Relevance to the basic concerns of life.
  - Viability/livability.
- Major extant worldviews.
  - Theism, atheism, pantheism.
  - Expressions in major world religious systems (Islam, Buddhism, Hinduism, Judaism).
  - Modernism, postmodernism.
  - Expressions in writings of modern philosophers (from Descartes to Derrida).

Fourth Quarter

- Questions about the existence and nature of God.
- Questions about law and justice.
- Questions about evil and suffering.
- Questions about cultural mores and institutions.

- Questions about biomedical ethics.
- Questions about art and aesthetics.
- Questions about science and the cosmos.
- Questions about the veracity of the Biblical text and message.
- Questions about the Person and work of Jesus Christ.
- Questions about human nature and destiny.

Student Resources

1. Norman Geisler & Peter Bocchino, *Unshakeable Foundations* (Minneapolis: Bethany House, 2001).
2. James Sire, *The Universe Next Door* (3d ed.) (Downers Grove, IL: IVP 1997).
3. Great Books of the Western World (selected philosophers).
4. Apologetic sourcebook (selected handouts).

5. One of the following:
   The MacArthur Study Bible.
   The NIV Study Bible.
   The Spirit of the Reformation Study Bible.
   Another approved study Bible.

Teacher Resources

Apologetic Systems

1. Campbell-Jack and McGrath, *New Dictionary of Christian Apologetics* (2006).
2. Norman Geisler, *Baker Encyclopedia of Christian Apologetics*.
3. Steven B. Cowan, editor, *Five Views on Apologetics* (Zondervan, 2000).

Classical Apologetics

1. William Lane Craig, *Reasonable Faith*.
2. Norman Geisler, *Christian Apologetics*.
3. Norman Geisler & Ron Brooks, *When Skeptics Ask: A Handbook on Christian Evidences* (Victor Books, 1989).
4. Norman Geisler & Thomas Howe, *When Critics Ask: A Popular Handbook on Bible Difficulties* (Victor Books, 1992).
5. Gerstner, Sproul, Lindsley, *Classical Apologetics*.
6. R.C. Sproul, *Defending Your Faith* (Crossway, 2003).

Evidential Apologetics

1. Winfried Corduan, *No Doubt About It – The Case for Christianity* (Broadman & Holman, 1997).
2. C.S. Lewis, *The Abolition of Man* (HarperSanFrancisco, 2001).
3. C.S. Lewis, *Mere Christianity* (HarperSanFrancisco, 2001).
4. Josh McDowell, *Evidence That Demands a Verdict*.
5. Lee Strobel, *A Case for Christ* (Zondervan).
6. Lee Strobel, *A Case for Faith* (Zondervan, 2000).

Narrative Apologetics (selected resources)

1. Kurt Bruner & Jim Ware, *Finding God in The Lord of the Rings* (Tyndale, 2001).

2. C.S. Lewis, *The Chronicles of Narnia*, *Space Trilogy*, *The Screwtape Letters*.

3. For help on Lewis, see, e.g., Terry Glaspey, *Not a Tame Lion* (Cumberland, 1996); Louis Markos, *Lewis Agonistes* (Broadman & Holman, 2003); Will Vaus, *Mere Theology* (IVP, 2004).

Practical Presuppositional Apologetics

1. Scott Burson & Jerry Walls, *C.S. Lewis & Francis Schaeffer: Lessons for a New Century from the Most Influential Apologists of Our Time* (IVP, 1998).
2. Nancy Pearcey, *Total Truth*.
3. Francis Schaeffer, *Trilogy: The God Who Is There*, *Escape from Reason*, *He is There and He Is Not Silent*.

Presuppositional Apologetics

1. Greg Bahnsen, *Always Ready* (Covenant Media Foundation, 1996).
2. Greg Bahnsen, *Van Til's Apologetic*.
3. John Frame, *Apologetics to the Glory of God* (P&R, 1994).
4. John Frame, *Cornelius Van Til: An Analysis of His Thought*.
5. Richard L. Pratt, Jr., *Every Thought Captive*.
6. Cornelius Van Til, *Apologetics*.
7. Cornelius Van Til, *Why I Believe In God*.

Reformed Epistemological Apologetics

1. Alvin Plantinga, *Christian Warrant*.

<u>Philosophy</u>

1. Baruch Brody, ed., *Readings in the Philosophy of Religion*, 2d ed., (Englewood Cliffs, NJ: Prentice-Hall 1992).
2. Colin Brown, *Christianity & Western Thought: Vol. 1, From the Ancient World to the Age of Enlightenment* (IVP, 1990). The earlier version is *Philosophy & the Christian Faith* (IVP, 1968).
3. Stephen R.C. Hicks, *Explaining Postmodernism* (Scholargy, 2004).
4. Esther Lightcap Meek, *Longing to Know: A Philosophy of Knowing for Ordinary People*.
5. Myron Penner, editor, *Christianity and the Postmodern Turn* (Brazos Press, 2005).
6. Gene Edward Veith, Jr., *Postmodern Times: A Christian Guide to Contemporary Thought and Culture* (Crossway Books, 1994).

Religions

1. Winfried Corduan, *Neighboring Faiths: A Christian Introduction to World Religions* (IVP, 1998).
2. Norman L. Geisler and Abdul Saleeb, *Answering Islam: The Crescent in Light of the Cross* (Baker Books, 2002).
3. Timothy George, *Is the Father of Jesus the God of Muhammad* (Zondervan, 2002).
4. Walter Martin, *The Kingdom of the Cults* (Bethany House, 1985).
5. Josh McDowell and Don Stewart, *Understanding Non-Christian Religions* (Here's Life Publishers, 1982).
6. Ravi Zacharias, *Jesus Among Other Gods* (Thomas Nelson, 2000).
7. Ravi Zacharias, *The Real Face of Atheism* (Baker, 2004).

Selected Works on the Apologetics of Science

1. Michael J. Behe, *Darwin's Black Box* (Touchstone, 1996).
2. William Dembski, *Intelligent Design* (IVP, 1999).
3. David G. Hagopian, editor, *The Genesis Debate* (Crux Press, 2001).
4. Philip E. Johnson, *Defeating Darwinism By Opening Minds* (IVP, 1997).
5. J.P. Moreland and John Mark Reynolds, *Three Views on Creation and Evolution* (Zondervan, 1999).
6. Henry Morris, *What Is Creation Science* (Master Books, 1999).
7. Hugh Ross, *Creation as Science* (NavPress, 2006).
8. R.C. Sproul, *Not a Chance* (Baker, 1994).
9. Lee Strobel, *The Case for a Creator* (Zondervan, 2004).
10. B.B. Warfield, *Evolution, Science, and Scripture* (Baker, 2000).
11. Thomas Woodward, *Doubts About Darwin* (Baker, 2003).

Other Apologetic Issues

1. C.S. Lewis, *The Problem of Pain*.

The Paideia School
Greek II 12th Grade

Biblical Principles

1. God has given us the gift of language constructed in a rational and propositional mode so that we may better understand Him, one another, and the created order.
2. Language is an essential tool in our fulfillment of the Dominion Mandate and the Great Commission.
3. God has given us language to accumulate, organize, and transmit knowledge gained by the human race.
4. The providential generation of multiple languages and study of these languages allows the student a means to view, understand, and transcend cultural differences.
5. Language, learned well and articulated wisely, is of great service to God and man.

Classical Languages and Literature Department Goals

1. Recall grammatical constructions and their uses.
2. Identify vocabulary and English derivatives.
3. Translate simple and complex grammatical constructions.
4. Read primary source documents for comprehension.
5. Interpret and analyze cultural values of Classical Antiquity from primary source readings.
6. Evaluate the culture of Classical Antiquity according to Biblical standards.

Course Goals

Students will:

1. Increasingly appreciate the importance of knowing Koine Greek.
2. Review/consolidate knowledge of basic Greek grammar.
3. Conjugate and translate Greek verbs.
4. Build a repertoire of basic vocabulary.
5. Translate simple Greek sentences.
6. Conduct word studies with lexical tools.

Course Objectives

First Quarter

- Rationale for and survey of the course.
- Review of nouns, pronouns, and adjectives, prepositions.
- Introduction to verbs: person, number, tense, voice, mood, aspect.
- Formal components of verbs: augment/reduplication, stem, connecting vowel, personal ending.
- Present indicative verbs (active, middle/passive voice).
- Contract verbs (rules and paradigms).
- Deponent verbs.

Second Quarter

- Future Indicative verbs (active/middle voice).
- Verbal roots and patterns of modification.
- Liquid futures.
- Imperfect indicative verbs (active, middle/passive voice).
- Second aorist indicative (active, middle voice).
- First aorist indicative (active, middle voice).
- Aorist and future indicative (passive voice).
- Perfect indicative (active, middle/passive voice).
- Build vocabulary to approximately 275 words.

Third Quarter

- Introduction to participles (forms, usage, translation).
- Adverbial and adjectival usage.
- Present participles(active, middle/passive voice).
- Aorist participles (active, middle, passive voice).
- Perfect participles (active, middle/passive voice).
- Other participial forms: genitive absolutes, periphrastic constructions.

Fourth Quarter

- Subjunctive mood (forms, usage, translation).
- Imperative mood (forms, usage, translation).
- Infinitives (forms, usage, translation).
- μι verbs.
- Build vocabulary to approximately 325 words.

Teacher Resources

Kurt Aland, et al., ed., *The Greek New Testament, 4th edition* (ISBN ??).
The University of York website: http://www-users.cs.york.ac.uk/~fisher/gnt (electronically annotated Greek text).
The Resurgence Greek Project website: http://www.zhubert.com/tutorial (electronically annotated Greek text).
Tevaultesoft website: http://www.tavultesoft.com/keyman (for downloading Greek font).

Student Resources

Kurt Aland, et al., ed., *The Greek New Testament, 4th edition* (ISBN ??).
William Mounce, *A Graded Reader of Biblical Greek* (ISBN 0=310-20582-4).

The Paideia School
English 12
American Literature

Biblical Principles

1. Communication is a reality intrinsic to the triune Godhead and extrinsic to God in relation to His creation.
2. Language is a divine gift that enables man to think and to communicate clearly, quickly, and meaningfully.
3. God intends that man's thoughts and communications reflect truth, goodness, and beauty.
4. Sin's power to distort and pervert the created order extends even to man's thoughts and communications.
5. The Bible is the intellectual, moral, and spiritual standard for evaluating all other communication: in content, in motive, and in effect.

English Department Goals

1. Examine the worldviews that manifest themselves in language and literature and evaluate them from a Biblical perspective.
2. Train in the use of grammatical and literary tools to fully engage the great literary art of Western Civilization.
3. Recognize that grammatical and literary skills provide access to all other academic and artistic pursuits.
4. Articulate the great ideas through thorough research, careful documentation, and eloquent analysis, building dialectical and rhetorical skills in an age appropriate manner.
5. Develop creative abilities to the glory of God.

Course Goals

Students will:

1. Read and analyze a variety of American literature.
2. Understand the technical and aesthetic aspects of great literature.
3. Think critically about the content, form, and interpretation of literary works.
4. Develop a deeper understanding of truth as they learn to differentiate between vain philosophies and Scriptural principles in literature.
5. Expand their ability to integrate deeper thought and learned vocabulary into their own verbal and written communication.
6. Develop a higher view of God through an examination of beauty, form and talent.

Course Objectives

First Quarter

Literature: Metaphysical and Frontier Periods

- *General History of Virginia* (selections)-John Smith
- *Of Plymouth Plantation* (selections)-William Bradford
  -comparison between the Christian and secular foundations
  -developing American style
- "The Flesh and the Spirit," "To My Dear and Loving Husband"- Anne Bradstreet
- "Meditation 1," "Meditation 8," "Huswifery," "Wedlock"-Edward Taylor
  -characteristics of metaphysical poetry (conceit)
- "Sinners in the Hands of an Angry God"-Jonathan Edwards
- "Legend of Sleepy Hollow"-Washington Irving
- *Last of the Mohicans*-James Fennimore Cooper
  -Romantic hero
  -Themes: frontier hero, noble savage, pragmatism

Writing

- Strong Sentences
- Paragraphs
- Literary Paper (using primary source)
-
- Style Skills: As Needed (e.g. word choice, conventions of quoting, concision, cohesion & coherence, emphasis, sentence variety, topic and conclusion sentences, verb usage, elegance)

Second Quarter

Literature: Transcendental Period

- "The Divinity School Address" and "The Poet"-Ralph Waldo Emerson
  -origins of Transcendentalism
- "The Tell-Tale Heart," "The Bells," "The Raven," "Ligeia"-Edgar Allen Poe
  -psychological manipulation of horror story
  -mind over matter
- "The Village Blacksmith" and "A Psalm of Life"-Henry Wadsworth Longfellow
- Selections from *Walden Pond*-Henry David Thoreau
  -passive resistance
- *The Scarlet Letter*-Nathaniel Hawthorne
  -Puritan hypocrisy

Writing

- Researching Literary Sources (library and internet)
- Annotated Bibliography
- Literary Paper (using primary source)

Style Skill: As Needed (see first quarter)

Third Quarter

Literature: Realistic and Modern Periods

- When Lilacs Last in the Courtyard Bloomed"-Walt Whitman
  - -Free Verse
  - -Romantic temperament with realistic vocabulary (transitional)
- "The Soul," "I Heard a Fly Buzz," etc-Emily Dickinson
- "The Man Who Corrupted Hadleyburg"-Mark Twain
  - -Realism
  - -cynicism of Twain
- "To Build a Fire"-Jack London
  - -instinct superior to intelligence
  - -natural selection
- "Once by the Pacific," "Stopping by the Woods on a Snowy Evening," "Birches," "The Road Not Taken"- Robert Frost
  - -characteristics of Frost's poetry (blank verse, common language)
- "Neighbor Rosicky"-Willa Cather
- "Roman Fever"-Edith Wharton
- "Daisy Miller"-Henry James
  - -Americans in Europe
- *The Great Gatsby*-F. Scott Fitzgerald
  - -synaesthesia
  - -The Roaring 20's
  - -use of color
- *The Sun Also Rises*-Ernest Hemingway
  - -hedonism
  - -existentialism
  - -living futilely with a flourish (beautiful vanity)
  - -Theme: the futility of Jake's choice between his two loves, Lady Brett and bull-fighting

Writing

- Literary Paper (primary source)
- Literary Research Paper (primary and secondary sources)
- Style Skill: As Needed (see first quarter)

Fourth Quarter

Literature: Modern Period

- Finish *The Sun Also Rises*
- *Of Mice and Men*-John Steinbeck
  - -voice of common man during Great Depression
  - -Theme: people owning land and people working together grant power to individuals
- "Good Country People"-Flannery O'Conner
  - -shock value
- *The Glass Menagerie*-Tennessee Williams

Writing

- Glorified Outline (thesis, outline, and examples)
- Literary Research Paper (primary and secondary sources)
- Style Skill: As Needed (see first quarter)

Teacher Resources

American Literature Anthology. Meyer, Aislinn. (Teacher-Created Resource)
Last of the Mohicans. Cooper, James Fennimore.
The Scarlet Letter. Hawthorne, Nathaniel.
The Great Gatsby. Fitzgerald, F. Scott.
The Sun Also Rises. Hemingway, Ernest.
Of Mice and Men. Steinbeck, John.
The Glass Menagerie. Williams, Tennessee.
A Handbook to Literature. Harmon, William and Hugh Holman. New Jersey: Prentice Hall, 2003. ISBN: 0130979988.
Style: Lessons in Clarity and Grace. Williams, Joseph M. ISBN: 978-0205747467

Student Resources

American Literature Anthology. Meyer, Aislinn. (Teacher-Created Resource)
Last of the Mohicans. Cooper, James Fennimore.
The Scarlet Letter. Hawthorne, Nathaniel.
The Great Gatsby. Fitzgerald, F. Scott.
The Sun Also Rises. Hemingway, Ernest.
Of Mice and Men. Steinbeck, John.
The Glass Menagerie. Williams, Tennessee.

Summer Reading:
Designated Bible Selection
Fahrenheit 451, Bradbury.
Defending the Declaration, Amos.
Mere Christianity, Lewis.

Extra Credit
The Reason for God, Keller.

Suggested Activities
American Literature CLEP Exam

The Paideia School
History 12
Great Ideas II

Biblical Principles

1. God sovereignly superintends all things, including man's activities and circumstances throughout history.
2. The Biblical conception of linear time moving from creation through the cross toward its consummation in Christ's second coming gives meaning and urgency to historical events.
3. God judges individuals, cultures, and nations that fall short of His glory, and only Christ and His gospel can redeem and ennoble them.
4. God judges individuals in eternity according to their faith in Christ, but He deals with nations in the course of historical events according to their standards of justice and righteousness.
5. God commands that men learn from the mistakes and accomplishments of their historical predecessors.

History Department Goals

1. Attain a Scriptural understanding of human nature and historical patterns, with particular attention to sin and its consequences.
2. Understand that history is an examination of the progression and composite of all Divine activity and human endeavor.
3. Use the discipline of History as a paradigm for the study of the development of other subject areas.
4. Interact frequently with primary sources, especially those from the canon of Western Civilization.
5. Articulate thoughts and beliefs regarding historical events by thorough research, careful documentation, and wise expression.
6. Incorporate Biblical precept and historical example in pursuit of godly citizenship.

Course Goals

Students will:

1. Develop an acquaintance with the seminal thinkers, their writings, and the Great Ideas of the West, and evaluate them from a Biblical perspective.
2. Trace the historical development of the Great Ideas of the West.
3. Gain facility in identifying, analyzing, and synthesizing concepts across a broad array of disciplines: supporting truth and detecting error.
4. Express thoughts, beliefs, and convictions precisely and persuasively on the fundamental ideas and issues in human existence.
5. Begin to form a cogent and comprehensive Biblical worldview that will enrich and enliven the soul for a lifetime of personal growth, ministry and witness.

Course Objectives

Students are to read only selections of the works listed.

First Quarter

- Wisdom:
  Proverbs 8-9
- Virtue/Vice:
  Plato, *Meno*: Can virtue be taught?
  Plato, *Republic*
  Aristotle: *Nichomachean Ethics*: the Golden Mean
  John S. Mill: *Utilitarianism*
  C.S. Lewis: *Mere Christianity*: Cardinal and Theological Virtues
- Happiness:
  Mortimer Adler: *Ten Philosophical Mistakes*: Happiness and Contentment
  Saint Augustine: *Confessions, City of God*
- Love:
  C.S. Lewis: *The Four Loves*: affection, friendship, eros, charity

Second Quarter

- Truth:
  Mortimer Adler: *Six Great Ideas*
  Friedrich Nietzsche: *Beyond Good and Evil*: perspectivism, relativity, the ubermensch
- Goodness:
  Mortimer Adler: *Six Great Ideas*: real and apparent goods
  C.S. Lewis: *The Problem of Pain*: theodicy
  Plato: *Republic*: The Good
  G.K. Chesterton: *Heretics*
- Beauty:
  Mortimer Adler: *Six Great Ideas*: beauty is in the eye of the beholder
  Plotinus: *First Ennead, Sixth Tractate*: soul's longing for beauty
  Immanuel Kant: *Observations on the Feeling of the Beautiful and the Sublime*: subjectivity of taste
  Friedrich Nietzsche: *The Birth of Tragedy*: beauty and art
- Sin:
  Saint Augustine: *Confessions*: effects of sin on soul and perception
  Soren Kierkegaard: *The Concept of Dread*: sin and angst

Third Quarter

- Metaphysics
  - Plato: *Republic*: sensible versus intelligible worlds
  - Aristotle: *Categories*
  - John Locke: *An Essay Concerning Human Understanding*: primary and secondary qualities
  - Georg Hegel: *Phenomenology of Spirit*: Absolute Spirit
  - Kierkegaard: *Fear and Trembling*: existentialism, teleological suspension of the ethical, being and becoming
  - Nietzsche: *The Gay Science*: "God is Dead"
  - Heidegger: *Being and Time:* phenomenology, Dasein
  - Sartre: *Being and Nothingness*: negation and consciousness
  - Sartre: *No Exit*: existential despair
  - Francis Schaeffer: *The God Who is There*: the line of despair

Fourth Quarter

- Time/History/Eternity
  - Ecclesiastes 1-3: circular and linear aspects of time
  - Plato: *Timaeus*: creation of the world
  - Lucretius: *The Way Things Are*
  - Augustine: *Confessions*: nature of time and memory
  - Hegel: *Reason in History*: the Absolute Mind, the dialectic
  - G.K. Chesterton: *Everlasting Man*: the incarnation and history
  - C.S. Lewis, *The Weight of Glory*: longing for eternity
  - T.S. Eliot: *The Four Quartets*: tension between time and eternity, redemption of time
  - C.S. Lewis: *The Problem of Pain*: Heaven

Student Materials

Encyclopedia Britannica's Great Books of Western Civilization, Six Great Ideas, The Four Loves, The Weight of Glory, The Four Quartets

Teacher Materials

How to Think About the Great Ideas

Reference Resources

Cambridge Dictionary of Philosophy, A History of Philosophy (F. Copleston)
Students are to read only selections of the works listed.

The Paideia School
Mathematics 12
Calculus

Biblical Principles

1. The mind and character of God are the foundation of mathematical truth as revealed in creation: order, non-contradiction, immutability, infinitude, precision, beauty, and harmony.
2. God equips man with a rational mind to apprehend mathematical truth in creation.
3. Man's finitude and sin nature preclude a comprehensive understanding of mathematical intricacies of the created order.
4. God enables man to use mathematical knowledge to strive toward fulfillment of the dominion mandate.
5. God's command to count and measure reflects the truth that there is a righteous standard by which He will judge men.

Mathematics Department Goals

1. Recognize the attributes of God that are revealed by a study of mathematics.
2. Know that man's sin nature and finitude hinder his complete understanding of math and other intricacies of the created order.
3. Understand that human standards of measurement testify to the reality of God's perfect knowledge and righteous standard.
4. Build on the foundation of the grammar years to further develop logical thinking patterns, problem solving abilities, and elegant expression of the same.
5. Appreciate the role of mathematics in the historical development of other disciplines and of culture.
6. Develop mathematical faculties to the fullest in order to use such tools in the service of God and man.

Course Goals

Students will:

1. Recognize attributes of God, His perfect knowledge and righteous standard as reflected in the study of Calculus.
2. Recognize the uses and limits of higher Mathematics.
3. Apply the tools of logic, previous knowledge of Algebra, Geometry, and Pre-Calculus to practical projects.
4. Discuss manipulation of rational expressions.
5. Learn the functionality of graphing calculators in order that students may practice using tools that aid in accomplishing the dominion mandate.
6. Communicate mathematics both orally and in writing.

AP® Calculus AB: Syllabus Contents

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Curricular Requirements

CR1a The course is structured around the enduring understandings within Big Idea 1: Limits.
• See page 3

CR1b The course is structured around the enduring understandings within Big Idea 2: Derivatives.
• See pages 3, 4

CR1c The course is structured around the enduring understandings within Big Idea 3: Integrals and the Fundamental Theorem of Calculus.
• See page 4

CR2a The course provides opportunities for students to reason with definitions and theorems.
• See page 5

CR2b The course provides opportunities for students to connect concepts and processes.
• See page 5

CR2c The course provides opportunities for students to implement algebraic/computational processes.
• See page 5

CR2d The course provides opportunities for students to engage with graphical, numerical, analytical, and verbal representations and demonstrate connections among them.
• See pages 5

CR2e The course provides opportunities for students to build notational fluency.
• See page 6

CR2f The course provides opportunities for students to communicate mathematical ideas in words, both orally and in writing.
• See pages 6

CR3a Students have access to graphing calculators.
• See page 2

CR3b Students have opportunities to use calculators to solve problems.
• See page 5

CR3c Students have opportunities to use a graphing calculator to explore and interpret calculus concepts.
• See page 6

CR4 Students and teachers have access to a college-level calculus textbook.
• See page 7

School Profile

School Environment: Our school is a private, non-profit organization that opened in 2006. We offer Kindergarten through 12th Grade instruction, and currently have a total enrollment of 95 students. In May 2017, we graduated 2 students. Both of them are attending four-year college/university. The high school has a seven-period day. Each class period is 50-55 minutes long, and classes meet every day of the week. We currently have one student enrolled in the AP Calculus AB class. The student will sit for the AP Exam in the spring.

Grades: Our school is K-12; the Calculus students are seniors.

Type: We are a private school.

Total Enrollment: 95 students

Ethnicity: 20% of our students are African-American, 18% are Hispanic/Latino, and 62% are Caucasian.

Overview of Advanced Placement Calculus AB

Prerequisites

Before studying calculus, all students complete four years of secondary mathematics designed for college-bound students: Algebra I, Geometry, Algebra II, and PreCalculus. These students successfully completed PreCalculus, a course of study encompassing the vocabulary, concepts, algebra, properties, and graphs of functions, trigonometry, and pre-calculus topics. The students follow a standard 4-year track beginning with Algebra I in eighth grade and taking Calculus as a senior.

Course Design and Philosophy

Students do best when they understand the concepts of Calculus. The course focuses on major concepts and an examination of why things occur. If students can be taught the reasons for an idea or theorem, they should be able to apply the reasons to a specific problem assigned. Students study three major concepts during the school year: limits, derivatives, and integrals (indefinite and definite, with the Fundamental Theorem of Calculus). As the big ideas are developed, the mechanics of each are developed. Students use graphing calculators to solve problems, experiment, interpret results, and support conclusions for each big idea studied.

Teaching Strategies

Students are taught concepts using the rule of three — that is, that mathematical ideas are investigated analytically, graphically, and numerically. Students are expected to relate the three representations to each other. It is important that students understand that graphs and tables are important representations of conceptual data. It is equally important that students understand that they must provide analytic arguments. All tests are written so that questions are presented both as multiple-choice and using a free-response approach. Depending on the concepts being assessed, some tests allow calculator usage, some no calculator, and some have two parts: one with a calculator and the other without. Whenever possible, questions are included that contain only graphs or tables.

It is extremely important to maintain a high level of expectation for the students. Students will rise to the level of teacher expectation. Effective communication is a major goal of the course. Students are expected to explain solutions fully using proper terminology and notation. It is expected during lessons that students will verbally share solutions using the proper vocabulary and terminology as well as sharing visually on paper/whiteboards using the proper vocabulary and notation in sentence form.

The most important key to student success in the class is for them to do their homework assignments daily. It is much easier to stay current rather than to try to catch up later. Much of calculus requires understanding of previous concepts from previous lessons, so staying current with assignments is extremely important for student success. Students are assigned homework based on lessons that thoroughly cover the concepts needed. Any student with questions on homework problems can come for help, tutoring, extra instruction, etc. Assignments are returned daily with feedback to ensure any misconceptions are rectified.

Calculator & Technology Ideas

A graphing calculator is required of all students; they have the TI-84 graphing calculator. These students have been using this calculator extensively in Algebra II Honors and PreCalculus. Use of the calculator by students to solve problems includes, but is not limited to, plotting and analyzing the graphs of functions within an arbitrary viewing window, finding the zeros of functions, finding the limit of a function at a specific value, and analytically and numerically calculating both the derivative of a function and the value of a definite integral. **[CR3a]**

Another major use of graphing calculators is in labs to "discover" some of the concepts and principles at work by experimenting with the various function representations and approaches to their solutions. Calculator lab topics include the following:

- Developing an intuitive understanding of limits
- Investigating the Intermediate Value Theorem
- Defining the slope of a function at a point by zooming in
- Relationship between a function and its derivative
- Linking up with the chain rule
- Exploring exponentials
- Newton's method
- Riemann sums and the definite integral
- Average value of a function
- Numerical integration

[CR3a] — Students have access to graphing calculators.

Course Outline

An outline of the topics discussed and practiced in the course.

I. Limits and Continuity **[CR1a]**
   1. Evaluating limits
      a. Limits evaluated from tables
      b. Limits evaluated from graphs
      c. Limits evaluated with technology
      d. Limits evaluated algebraically
      e. Limits that fail to exist
   2. Limits at a point
      a. Properties of limits
      b. Two-sided limits
      c. One-sided limits
   3. Continuity
      a. Defining continuity in terms of limits
      b. Discontinuous functions
         i. Removable discontinuity
         ii. Jump discontinuity
         iii. Infinite discontinuity
      c. Properties of continuous functions
         i. The Intermediate Value Theorem
         ii. The Extreme Value Theorem
   4. Limits involving infinity
      a. Asymptotic behavior
      b. End behavior

[CR1a] — The course is structured around the enduring understandings within Big Idea 1: Limits.

II. Differential Calculus **[CR1b: derivatives]**
   1. Introduction to derivatives
      a. Average rate of change and secant lines
      b. Instantaneous rate of change and tangent lines
      c. Defining the derivative as the limit of the difference quotient
      d. Approximating rates of change from tables and graphs
   2. Relating the graph of a function and its derivative
   3. Differentiability
      a. Relationship between continuity and differentiability
      b. When a function fails to have a derivative
   4. Rules for differentiation
      a. Polynomial and rational functions
      b. Trigonometric functions
      c. Exponential and logarithmic functions
      d. Inverse trigonometric functions
      e. Second derivatives
   5. Methods of differentiation

a. The chain rule
b. Implicit differentiation
c. Logarithmic differentiation

6. Applications of derivatives
   a. Velocity, acceleration, and other rates of change
   b. Related rates
   c. The Mean Value Theorem **[CR1b: Mean Value Theorem]**
   d. Increasing and decreasing functions
   e. Extreme values of functions
   f. Local (relative) extrema
   g. Global (absolute) extrema
   h. Concavity
   i. Modeling and optimization
   j. Linearization
   k. Newton's method
   l. L'Hospital's Rule

[CR1b] — The course is structured around the enduring understandings within Big Idea 2: Derivatives.

III. Integral Calculus **[CR1c: integrals]**

1. Antiderivatives and indefinite integrals
2. Approximating areas
   a. The rectangle approximation method
   b. Riemann sums
   c. The trapezoidal rule
3. Definite integrals and their properties
4. The Fundamental Theorem of Calculus
   a. The First Fundamental Theorem of Calculus **[CR1c: Fundamental Theorem of Calculus part 1]**
   b. The Second Fundamental Theorem of Calculus **[CR1c: Fundamental Theorem of Calculus part 2]**
   c. The Mean Value Theorem for integrals
   d. Average value of a function
5. Methods of integration
   a. Algebraic manipulation
   b. Integration by substitution
6. Solving differential equations
   a. Separation of variables
   b. Slope fields
7. Applications
   a. Exponential growth and decay
   b. Particle motion
   c. Area between two curves
   d. Volumes
      i. Volumes of solids with known cross sections
      ii. Volumes of solids of revolution

[CR1c] — The course is structured around the enduring understandings within Big Idea 3: Integrals and the Fundamental Theorem of Calculus.

Mathematical Practices

The following is a brief description of some of the activities included in the course.

I. Reasoning with definitions and theorems
LO 1.2B - In problems where students practice applying the results of key theorems (e.g., Intermediate Value Theorem, Mean Value Theorems, and/or L'Hospital's Rule), students are required for each problem to demonstrate verbally and/or in writing that the hypotheses of the theorems are met in order to justify the use of the appropriate theorem. **[CR2a]**

[CR2a] — The course provides opportunities for students to reason with definitions and theorems.

II. Connecting concepts and processes
LO 3.3A - Students are provided with the graph of a function and a second function defined as the definite integral of the graphed function with a variable upper limit. Using differentiation and antidifferentiation, students evaluate specific values of the second function and then find the intervals where the integral function is increasing, decreasing, concave up, and concave down. They use this information to sketch a rough graph of the second function. **[CR2b] [CR2d: graphical]**

[CR2b] — The course provides opportunities for students to connect concepts and processes.
[CR2d] — The course provides opportunities for students to engage with graphical, numerical, analytical, and verbal representations and demonstrate connections among them.

III. Implementing algebraic/computational processes
LO 3.2B - Students are presented with a table of observations collected over time periods of different lengths (e.g., temperatures or stock prices). Students use Riemann sums to numerically approximate the average value of the readings over the given time period and interpret the meaning of that value. **[CR2c] [CR2d: numerical]**

[CR2c] — The course provides opportunities for students to implement algebraic/computational processes.
[CR2d] — The course provides opportunities for students to engage with graphical, numerical, analytical, and verbal representations and demonstrate connections among them.

IV. Connecting multiple representations
LO 2.3C - Students are presented with numerous functions modeling velocity and time for objects in motion. These functions are presented numerically, graphically, analytically (in the form of a formula), and verbally (as a description in words of how the function behaves). Many of these functions are distinct, but some represent the same function (e.g., one of the functions presented verbally is the same as one of the functions presented analytically). Given some initial conditions, students calculate or approximate displacement, total distance travelled, and acceleration for these functions (both by hand and with a graphing calculator), and determine which representations are the same function. Students evaluate how each representation was useful for solving the problems. **[CR2d: connection between analytical and verbal] [CR3b]**

[CR2d] — The course provides opportunities for students to engage with graphical, numerical, analytical, and verbal representations and demonstrate connections among them.
[CR3b] — Students have opportunities to use calculators to solve problems.

V. Building notational fluency

LO 3.5B - Students are given a variety of growth and decay word problems where the rate of change of the dependent variable is proportional to the same variable (e.g., population growth, radioactive decay, continuously compounded interest, and/or Newton's law of cooling). Students are asked to translate the problem situation into a differential equation using proper notation. Students show the steps in solving the differential equation, continuing to use proper notation for each step (e.g., when to keep or remove absolute value). In a later activity, students will vary initial conditions and use their calculators to graph the resulting solutions so that students can explore the effect of these changes. **[CR2e] [CR3c]**

[CR2e] — The course provides opportunities for students to build notational fluency.

[CR3c] — Students have opportunities to use a graphing calculator to explore and interpret calculus concepts.

VI. Communicating

Throughout the course, students are required to present solutions to homework problems both orally and on the board to the rest of the class. On at least one question on each quiz and test, students are explicitly instructed to include clearly written justifications in complete sentences for their solutions. **[CR2f]**

[CR2f] — The course provides opportunities for students to communicate mathematical ideas in words, both orally and in writing.

Review and Preparation for the AP Exam

The assignment schedule (shown at the end of this document) leaves 4 to 6 weeks for review for the AP exam. The philosophy of multiple representation and exposure is carried into AP review. It is imperative to build the concepts of calculus during the first three quarters of school. During the fourth quarter all concepts are reinforced and enhanced. These concepts are viewed in terms of how they fit into the body of calculus rather than as unrelated skills to be memorized. Reinforcing the relationship between integrals and derivatives is an important goal.

An item analysis of the first semester exam provides a starting point for the review for the AP exam. Since the questions on the semester exam are modeled from released AP exam questions, the item analysis provides an excellent starting point for the AP exam review. A couple of weeks into the fourth quarter, students take an exam that is designed and administered to mock the actual AP exam. Another item analysis is done, and scores are tallied according to AP guidelines to give students an approximate exam score and areas on which they should concentrate their study efforts. Other review assignments from a variety of sources are used, including free-response questions from previous exams. Students also participate in "grading" actual student responses with the College Board rubric. This allows the student to be knowledgeable of expectations, proper vocabulary and notation, and common misconceptions. In addition, material from each unit of study covered during the year is presented and reviewed with students and tests are given on each unit.

Textbooks, References, and Materials

Major Textbooks

Best, George, Stephen Carter, and Douglas Crabtree. *Calculus: Concepts and Calculators, Second Edition.* Andover, MA. : Venture Publishing, 2006. **[CR4]**

Sullivan & Miranda. *Calculus*. Second Edition. Bedford, Freeman & Worth High School Publishers, NY. 2017. **[CR4]**

[CR4] — Students and teachers have access to a college-level calculus textbook.

Reference Books / Supplementary Materials

Best, George, Stephen Carter, and Douglas Crabtree. *Calculus: Concepts and Calculators Instructor's Guide with CD, Second Edition.* Andover, MA. : Venture Publishing, 2013.

Lifshitz. *AP Calculus AB/BC, Preparing for the Advanced Placement Examinations.* Amsco Publication. 2017.

Cade, et al. *Fast Track to a 5: Prepairing for the AP Calculus AB and Calculus BC Examinations.* Cengage Learning. 2017.

Jerison, David. *18.01SC Single Variable Calculus.* Fall 2010. Massachusetts Institute of Technology: MIT OpenCourseWare, https://ocw.mit.edu.

Kleitman, Daniel. *18.013A Calculus with Applications.* Spring 2005. Massachusetts Institute of Technology: MIT OpenCourseWare, https://ocw.mit.edu.

MATH 140 Practice Gateway Exams, Jacksonville University Student Resources, http://www.ju.edu/mathematics/student-resources.php

Past Exam Questions for Calculus AB. http://apcentral.collegeboard.com/apc

Priestley, W.M. *Calculus: A Liberal Art, Second Edition*. Springer-Verlag New York, Inc., 1998.

Course Assignments

Textbooks:
**Calculus, 2nd edition*, Sullivan & Miranda, Bedford, Freeman & Worth High School Publishers
***Calculus: Concepts and Calculators, 2nd edition,* Best, Carter, Crabtree, Venture Publishing

BEGINNING OF SEMESTER I	
Ch 1 Limits and Continuity *	**(7 class periods)**
Topic	**Exercises**
Limits of Functions Using Numerical and Graphical Techniques	Page 86: 9, 13, 15, 25, 31, 55, 57
Limits of Functions Using Properties of Limits	Page 100: 11 – 41 odd, 63, 71, 73, 81
Continuity	Page 112: 13 – 25, 35, 37, 45, 47, 53, 59, 65
Limits and Continuity of Trigonometric, Exponential, and Logarithmic Functions	Page 124: 5, 23, 25, 31, 45
Infinite Limits; Limts at Infinity; Asymptotes	Page 139: 11,15,27,45,47,49,57,59,63,69,79
Review/Supplementary Problems	Page 154: 1,2,5,8,23,29,31,39,45,51,61
Test Chapter 1	
Ch 2 Derivative Functions **	**(23 class periods)**
Topic	**Exercises**
Average and Instantaneous Velocity	Page 87: 1 – 13 odd
Derivative of a Function at a Point	Page 97: 1, 2, 3, 15
Derivative of a Function at a Point	Page 97: 12, 14, 16, 17, 19
The Derivative Function	Page 105: 1 – 11 odd
The Derivative Function	Page 105: 13 – 23 odd
Calculating Derivative Numerically	Page 112: 1 – 7, 15, 17
Quiz 2.1 – 2.4	
Critical Numbers; Relative Max/Min	Page 116: 1, 3, 5, 7, 8, 9
Critical Numbers; Relative Max/Min	Page 116: 11 – 17 odd
Critical Numbers; Relative Max/Min	Page 116: 19, 21, 22, 23, 25
Inflection points and Second Derivative	Page 125: 1 – 7 odd
Inflection points and Second Derivative	Page 125: 2 – 8 even
Inflection points and Second Derivative	Page 125: 9 – 17 odd
Inflection points and Second Derivative	Page 125: 10 – 18 even
Quiz 2.5 – 2.6	
The Limit of a Function	Page 137: 11, 13
The Limit of a Function	Page 137: 15 – 27 odd
Continuity	Page 145: 1 – 15 odd
Continuity	Page 145: 2 – 16 even
Review/Supplementary Problems	Page 149: 2, 5, 6, 7, 9, 11
Review/Supplementary Problems	Page 149: 13, 14 – 17
Review/Supplementary Problems	Page 149: 19, 21, 29, 33
Test Chapter 2	

Ch 3 The Definite Integral **	**(9 class periods)**
Topic	**Exercises**
Calculating Distance Traveled	Page 163: 1 – 9 odd
Calculating Areas; Riemann Sums	Page 169: 1 – 11 odd
Definite Integrals	Page 176: 1, 2, 3
Definite Integrals	Page 176: 15 – 18
The Fundamental Theorem of Calculus	Page 184: 1-13 odd
The Fundamental Theorem of Calculus	Page 184: 12, 14, 15, 17, 19
Review/Supplementary Problems	Page 187: 1 – 9 odd
Review/Supplementary Problems	Page 187: 2, 4, 8, 11, 13
Test Chapter 3	
Ch 4 Differentiation Rules **	**(23 class periods)**
Topic	**Exercises**
Derivative Rules for Basic Functions	Page 200: 1 – 19 odd
Derivative Rules for Basic Functions	Page 200: 21 – 27 odd
Derivative Rules for Basic Functions	Page 200: 29 – 35 odd
Differentiating Exponential Functions	Page 206: 1 – 21 odd
The Product and Quotient Rules	Page 215: 1 – 23 odd
The Product and Quotient Rules	Page 215: 25 – 31
The Product and Quotient Rules	Page 215: 33 – 39
Quiz 4.1 – 4.3	
The Chain Rule	Page 223: 1 – 23 odd
The Chain Rule	Page 223: 2 – 24 even
The Chain Rule	Page 223: 25 – 34
The Chain Rule	Page 223: 35 – 45 odd
Functions Defined Implicitly	Page 229: 1 – 17 odd
Functions Defined Implicitly	Page 229: 19 – 25 odd
Related Rates	Page 235: 1 – 9 odd
Related Rates	Page 235: 11 – 15 odd
Related Rates	Page 235: 19 – 23 odd
Approximations	Page 243: 1 – 9 odd
Quiz 4.6 – 4.7	
Review/Supplementary Problems	Page 245: 2, 4, 5, 6, 8, 9, 10
Review/Supplementary Problems	Page 245: 13, 16, 19, 24, 27
Review/Supplementary Problems	Page 245: 26, 28, 29, 33, 35
Review/Supplementary Problems	Page 245: 37 – 42
Test Chapter 4	
Ch 5 More Applications of the Derivative**	**(15 class periods)**
Topic	**Exercises**
Increasing and Decreasing Functions	Page 260: 1 – 15 odd
Increasing and Decreasing Functions	Page 260: 19 – 31 odd
Increasing and Decreasing Functions	Page 260: 33 – 43 odd
Applications of the Second Derivative	Page 268: 1 – 13 odd
Applications of the Second Derivative	Page 269: 15 – 29

Limits Involving Infinity	Page 275: 1 – 19odd
Optimization Problems	Page 281: 1 – 7 odd
Optimization Problems	Page 281: 9 – 17 odd
Quiz 5.1 – 5.4	
The Mean Value Theorem	Page 285: 1– 11 odd
Antiderivatives	Page 291: 1 – 15 odd
Antiderivatives	Page 291: 17, 19, 27
Review/Supplementary Problems	Page 293: 1, 3, 4, 5, 8, 9
Review/Supplementary Problems	Page 293: 10, 11, 15, 16, 17, 20
Test Chapter 5	
END OF SEMESTER I	**CUT-OFF FOR MATERIAL SEMESTER I EXAM**
BEGINNING OF SEMESTER II	
Ch 6 Integrals **	**(9 class periods)**
Topic	**Exercises**
The Definite Integral Again	Page 304: 1 – 11 odd
The Definite Integral Again	Page 304: 12, 13 – 17 odd
Functions Defined by Integrals; Accumulation Functions	Page 312: 1 – 9 odd
The Fundamental Theorem Again	Page 318: 1 – 15 odd
Areas of Plane Regions	Page 324: 1 – 13 odd
Areas of Plane Regions	Page 324: 15 – 21 odd
Review/Supplementary Problems	Page 325: 1 – 13 odd
Review/Supplementary Problems	Page 325: 15 – 26 odd
Test Chapter 6	
Ch 7 Finding Antiderivatives **	**(20 class periods)**
Topic	**Exercises**
Antiderivatives	Page 332: 1 – 17 odd
Antiderivatives	Page 332: 19 – 27
Antiderivatives	Page 332: 29 – 35
The Method of Substitution	Page 342: 1 – 13 odd
The Method of Substitution	Page 342: 15 – 25 odd
Integration Using the Chain Rule	Page 336: 1 – 21 odd
Integration Using the Chain Rule	Page 336: 23 – 35 odd
Integration by Parts	Page 346: 1 – 9 odd
Integration by Parts	Page 346: 11 – 21 odd
Quiz 7.1 – 7.4	
Trig Functions and Inverses	Page 354: 1 – 3
Trig Functions and Inverses	Page 354: 5 – 15 odd
Trig Functions and Inverses	Page 354: 21 – 29 odd
Numerical Integration	Page 363: 1 – 7 odd
Numerical Integration	Page 363: 13 – 19 odd
Review/Supplementary Problems	Page 367: 1 – 19 odd

Review/Supplementary Problems	Page 367: 21 – 33 odd
Review/Supplementary Problems	Page 367: 37 – 45 odd, 61
Review/Supplementary Problems	Page 367: 47, 49, 51, 55, 57
Test Chapter 7	
Ch 8 Using the Definite Integral **	**(16 class periods)**
Topic	**Exercises**
Net and Total Distance Traveled	Page 376: 1 – 11 odd
Net and Total Distance Traveled	Page 376: 12 – 15
Volume by Slicing	Page 383: 1 – 9 odd
Volume by Slicing	Page 383: 11 – 17 odd
Volume by Slicing	Page 383: 18, 19, 21
Quiz 8.1 – 8.2	
Average Value of a Function	Page 391: 1 – 11 odd
Average Value of a Function	Page 391: 13 – 19 odd
Applications of the Definite Integral	Page 398: 1 – 5 odd
Applications of the Definite Integral	Page 398: 7 – 9
Applications of the Definite Integral	Page 398: 11, 15, 17
Review/Supplementary Problems	Page 402: 1 – 5 odd
Review/Supplementary Problems	Page 402: 7 – 13 odd
Review/Supplementary Problems	Page 402: 15 – 21 odd
Review/Supplementary Problems	Page 402: 23 – 29 odd
Test Chapter 8	
Ch 9 Differential Equations **	**(11 class periods)**
Topic	**Exercises**
Introduction	Page 411: 1 – 7 odd
Introduction	Page 411: 9 – 13 odd
Slope Fields	Page 416: 1, 3, 5, 10, 11
Separation of Variables	Page 427: 1 – 7 odd, 19
Separation of Variables	Page 427: 9 – 15 odd, 21, 23
Review/Supplementary Problems	Page 429: 1 – 9 odd
Review/Supplementary Problems	Page 429: 10, 11 – 19 odd
Review/Supplementary Problems	Page 429: 21 – 29 odd
Review/Supplementary Problems	Page 429: 31 – 37 odd
L'Hopital's Rule (Chapter 10 Lesson 1)	Page 440: 1 – 25 odd
Test Chapter 9	
END OF NEW MATERIAL	

The Paideia School
Science 12
Physics

Biblical Principles

1. God created all things out of nothing.
2. Creation reflects the glory of God's attributes in its scientific characteristics, as seen in its unity, diversity, order, complexity, beauty, consistency, and precision.
3. God sustains and redeems His fallen creation.
4. God commands and enables us to discover and utilize the intricacies of His creation.
5. God's creation includes marvels and mysteries that cannot be apprehended by scientific means.

Science Department Goals

1. Gain a Biblical perspective on the scientific enterprise and examine various scientific theories in light of Scriptural truth.
2. Attain an accurate knowledge of the contribution of Science to human life by teaching the history of scientific research, development, and invention.
3. Provide laboratory experiences that emphasize scientific method and safety principles.
4. Develop problem-solving abilities that include gathering data, marshaling evidence, utilizing discursive techniques, and interactive methods.
5. Blend inductive and deductive scientific teaching strategies to provide a realistic model of scientific endeavor.
6. Train in the ethical use of scientific knowledge and technology for the glory of God.

Course Goals

Students will:

1. Demonstrate an understanding of both theoretical and practical points of physics.
2. Master vocabulary necessary to understanding physics concepts.
3. Continue to develop skills in the area of scientific critique and debate.
4. Apply a combination of principles from Physics and Mathematics to lay the foundation for a better understanding of the physical universe.
5. Evaluate the difficult issues and their consequences as they relate to technology and the environment with attention to issues presented by the claims of the EPA, AMA, and NASA.

The Paideia School
Rhetoric II

Biblical Principles

1. Communication is a reality intrinsic to the triune Godhead and extrinsic to God in relation to His creation.
2. Language is a divine gift that enables man to think and to communicate clearly, quickly, and meaningfully.
3. God intends that man's thoughts and communications reflect truth, goodness, and beauty.
4. Sin's power to distort and pervert the created order extends even to man's thoughts and communications.
5. The Bible is the intellectual, moral, and spiritual standard for evaluating all other communication: in content, in motive, and in effect.

English Department Goals

1. Examine the worldviews that manifest themselves in language and literature and evaluate them from a Biblical perspective.
2. Train in the use of grammatical and literary tools to fully engage the great literary art of Western Civilization.
3. Recognize that grammatical and literary skills provide access to all other academic and artistic pursuits.
4. Articulate the great ideas through thorough research, careful documentation, and eloquent analysis, building dialectical and rhetorical skills in an age appropriate manner.
5. Develop creative abilities to the glory of God.

Course Goals

Students will:

1. Gain facility in skillful interpretation and analysis of received information.
2. Research, organize, and present information and ideas efficiently and effectively.
3. Appreciate the gift of communication and the responsibility of its rights and uses.
4. Practice clear and persuasive communication, both written and oral.
5. Engage in dialogue and debate incisively, articulately, and winsomely.

Course Objectives

First Quarter

- Develop Personal Mission Statement
- Review Selected Components of the Progymnasmata:
  Fables
- Create and Present an original short story
- Read: *Amusing Ourselves to Death by* Postman, Neil
- Evangelism
  The Ten Commandments
  Rhetorical Winsomeness

Second Quarter

- Develop a "Political Manifesto"
- Continue *Amusing Ourselves To Death* by Postman, Neil
- Review Selected Components of the Progymnasmata :
  Narrative on Matthew 18
  Patriotic Narrative (Pearl Harbor)
- Develop Biblical Servant Leadership Skills:
  Humility
  Vision
  Application
- Create a Portfolio

Third Quarter

- Formal Forensic Debate:
  Opening Statement
  Rebuttal
  Cross Examination
  Leading Questions
  Closing Arguments

- Progymnasmata
  - Chreia
  - Commonplace
  - Enargeia
  - Review importance of ethos, logos, and pathos

- Formal Debate

- Prepare for Senior Thesis Defense

Fourth Quarter

- Read *The Abolition of Man* and analyze the following:
  - The Tao and Absolute Value
  - Possible connection to, or disagreement with, Neil Postman
  - Establish connection between technology, power, pathos, and narcissism
  - How a Christian argues for truth in an objectiveless world
  - How a Christian defends the faith in a world that demands scientific answers

- Senior Thesis Defense

Teacher Materials

Bible
Lewis, C.S. *The Abolition of Man*. ISBN 0-06-065294-2
Nance, Jim. *Rhetoric.* ISBN 193-0443471
Postman, Neil. *Amusing Ourselves To Death.* . ISBN 0-14-303653-x

Student Materials

Bible
Lewis, C.S. *The Abolition of Man*. ISBN 0-06-065294-2
Postman, Neil. *Amusing Ourselves To Death* ISBN. 0-14-303653-x

Optional Activities

Evangelistic Trip to USF
Community Activism (see political manifesto)

The Paideia School
Art 12

Biblical Principles

1. God communicates His holiness, beauty, and majesty to man through the revelations of moral goodness and aesthetic beauty as well as through propositional truth.
2. Man, made in the *imago dei*, is possessed of creative imagination and skill.
3. Through common grace, man is able to appreciate truth, goodness, and beauty, and he expresses these through works of art.
4. Man's perception of truth, goodness, and beauty has been perverted and distorted by sin.
5. There are objective standards of beauty, as well as of truth and goodness.
6. Art reflects, interprets, and affects the world God has made; therefore, it must be submitted to His standards as to motive, effect, worldview content, and technical

Art Department Goals

1. Reflect and enjoy the absolute values of the truth, goodness, and beauty of God in artistic endeavors.
2. Appreciate human creative imagination and skill as gifts of God's common grace.
3. Recognize the fine arts as valuable means of the cultural engagement required both in the Dominion Mandate and the Great Commission.
4. Evaluate works of art through a Biblical perspective.
5. Achieve an appropriate balance of historical perspective, appreciation of master works, and technical skill for each art form and medium studied.
6. Emphasize the grammar, dialectic, and rhetoric of the fine arts at appropriate grade levels.

Course Goals

Students will:

1. Strive to glorify God through the creation of a personal portfolio of their artwork. The portfolio will include a still-life, a landscape, a human figure, an animal, and a self-portrait, and will incorporate a variety of media including oils, acrylic, watercolor, ink, and clay.
2. Examine, identify, and discuss masterworks, artists, and art movements, from the classical to the contemporary, learning to recognize beauty, goodness, and truth in these artworks through a Christian worldview.
3. Serve Paideia community by taking photographs and creating page layouts for the school yearbook and by designing and producing backdrops for our annual play.

Quarterly Objectives:

First Quarter

- Students continue portfolio work
- Schaeffer series – video nine (The Age of Personal Peace and Affluence) and seminar
- Student-selected art seminar

Second Quarter

- Students continue portfolio work / completing final projects
- Schaeffer series – video ten (Final Choices) and seminar
- Student-selected art seminar

Third Quarter

- Students finalize written explanations referencing portfolio work.
- Student-selected art seminar
- Play / set production

Fourth Quarter

- Student-selected art seminar
- Finalize portfolio

Teacher Resources:

Francis Schaeffer's "How Should We Then Live" video series and study guide.
ASIN: B000BS70P4

Activities:
Yearbook Staff - Design and Production
Design and production for Spring Play

The Paideia School
Upper School Music 12

Biblical Principles

1. God communicates His holiness, beauty, and majesty to man through the revelations of moral goodness and aesthetic beauty as well as through propositional truth.
2. Man, made in the *imago dei*, is possessed of creative imagination and skill.
3. Through common grace, man is able to appreciate truth, goodness, and beauty, and he expresses these through works of art.
4. Man's perception of truth, goodness, and beauty has been perverted and distorted by sin.
5. There are objective standards of beauty, as well as of truth and goodness
6. Art reflects, interprets, and affects the world God has made; therefore, it must be submitted to His standards as to motive, effect, worldview content, and technical excellence.

Music Department Goals

1. Reflect and enjoy the absolute values of the truth, goodness, and beauty of God in artistic endeavors.
2. Appreciate human creative imagination and skill as gifts of God's common grace.
3. Recognize the fine arts as valuable means of the cultural engagement required both in the Dominion Mandate and the Great Commission.
4. Evaluate works of art through a Biblical perspective.
5. Achieve an appropriate balance of historical perspective, appreciation of master works, and technical skill for each art form and medium studied.
6. Emphasize the grammar, dialectic, and rhetoric of the fine arts at appropriate grade levels.

Course Goals

Students will:

1. Develop an appropriate view of choral music in the roles of worship, academia and music history.
2. Develop breathing techniques that lead to the highest level of vocal production in the choral environment.
3. Develop a vocal tone that is sonorous, energized, and free.
4. Develop and demonstrate proper vocal posture.
5. Develop and demonstrate a functional knowledge, understanding, and application of basic diction principles and proper vowel production.
6. Learn and demonstrate the concept of ensemble that leads to proper choral blend, intonation, and rhythmic vitality.
7. Demonstrate an appropriate understanding of music theory, history, and aural skills.
8. Develop and demonstrate an ability to follow basic conducting gestures and cues.