

## COURSE DESCRIPTIONS

### **ART 316 History of Western Art and Architecture**

A survey of the great works of art and architecture that dominate Western culture. The course highlights the styles, principles, artists, and cultural forces that produced these works. The course also explores the concept of beauty/aesthetics in understanding and evaluation art, including analysis of Aristotle's and Aquinas' contributions.

### **CHR 101 The Origin of the Bible**

A general introduction to the Bible giving specific emphasis on its origin and production. Students of the course will learn about the historical origins, nature, and production of the First and Second Testaments and about various theories of bibliography. All of the basic "critical" fields of study – such as redaction, canonical, textual, and literary criticism – will be surveyed, along with the major literary groups within the Christian Bible.

### **CHR 111 The Old Testament Story**

A systematic survey of the Old Testament from Genesis to Malachi. Emphasis is given to the authorship, introduction and background of each book to include its literary structure and setting. The thematic and historical significance of the various literary genres will be studied within the unfolding historical account of the people of God in the Old Testament.

### **CHR 112 The New Testament Story**

A systematic survey of the New Testament from Matthew to Revelation. An emphasis is given to the authorship, introduction and background of each book to include its literary structure and setting. Special emphasis will focus on the life of Christ, the formation of the Church and the practical content of the Epistles and Revelation. The biblical events will be portrayed within their historical and cultural settings of the New Testament.

### **CHR 204 Biblical Backgrounds (Israel)**

A survey of the history, literature, archaeology, geography, and culture of biblical times. This course is designed specifically as a *Study Tour* in conjunction with the John Witherspoon College Israel Tour. Course requirements presuppose full participation in the Tour, augmented by additional reading and writing assignments, together with assessments of learning outcomes. *Prerequisites: CHR 111 and CHR 112*

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### **CHR 301 Biblical Interpretation**

The study of the principles and process of hermeneutics or interpretation applied specifically to the Bible as literature. Special attention is given to principles of literary analysis, literary genres found in the Bible, and to the significance of post-modern approaches to hermeneutics.

### **CHR 302 Christian Education**

An intensive study of the origin, purposes, officers, and curriculum of the educational organizations of the local church.

### **CHR 303 Missions and Evangelism**

An introduction to the topics of missions and evangelism, especially as it relates to the function of the church and the particular gifts of individual Christians. Topics covered include the nature of missions and evangelism, various approaches used, and challenges faced by Christians in the pluralist world of the 21st century.

### **CHR/LDR 303 Pastoral Ministry and Church Leadership**

A course designed to introduce students to the various types of leadership positions within the church. Particular attention will be given to the practical work of the pastor.

### **CHR 304 Biblical Counseling**

An introductory survey of Christian approaches to counseling. This survey will engage with biblical texts, secular counseling theories, and pastoral care literature in order to develop the students' critical thinking in their understanding of the counseling vocation and prepare students to discern, in a variety of settings, their roles in helping people with problems-in-living. Particular focus will be given to formulating a biblical basis for the sufficiency of Scripture with applications made to interpersonal discipleship/counseling relationships.

### **CHR 305 Marriage and Family Counseling**

A study of the principles and practice of marriage and family counseling. Specific emphasis will be given to the biblical understanding of marriage and family relationships, and to preventive, educational, and church-based counseling. *Prerequisite:* CHR 304 or permission of the instructor

### **CHR 306 Christian Apologetics**

A survey of both apologetic methodologies and various arguments used to support the credibility of the Christian world-and-life view.

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**CHR/HIS 307 History of Christianity I**

An examination of the history of Christianity from its first-century roots to the seventeenth-century settlement of the New World. Explores the development of Eastern and Western forms of Christianity and the evolution of denominationalism. Emphasizes the influence of Christianity on the social, political, and economic landscape of Europe and the Americas.

**CHR/HIS 308 History of Christianity II**

Explores the cultural diversity of Christianity by tracing the spread of Christianity from the Middle East to Africa, Asia, South Asia, Europe, and the Americas. Compares and contrasts Christian institutions, traditions, and practices across cultures over time from the first century to present day.

**CHR 331 *Theologia Principia I: Method, God, and Creation***

An introduction to the task and method of theology, as well as theology proper, theological anthropology, theories of sin and death, and perspectives on creation and their various implications.

**CHR 332 *Theologia Principia II: Christ, Church, and Eschatology***

An introductory study of the person and work of Christ, soteriology, the Holy Spirit, church, and last things.

**CHR 335 The History of Theology**

This course is a sweeping study of two thousand years of theology. The course will cover major debates and documents of the Church as well as significant theologians and pastors from the first seven ecumenical councils to the present day. Special emphasis is placed on the development of doctrine in the Christian faith, but we will also place these documents in context of larger events of church history. The course will trace particular theological themes from the early church to the present day, while also looking at issues that were specific to different eras. We will read important creeds and confessions along with portions of works from Athanasius, Augustine, Luther, Calvin, and others.

**CHR 395 Special Topics in Christian Studies**

A study for enrichment and practical training in specialized areas of the Christian life.

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**CHR 412 Prophets**

A survey of the prophetic literature in the Old Testament. The course covers both the major and minor prophets, and explores the message, historical context, and nature of prophetic literature.

**CHR 413 Poetry and Wisdom Literature of the Old Testament**

An intensive study of Hebrew poetry and wisdom literature (Job, Psalms, Proverbs, Ecclesiastes, Song of Songs).

**CHR 414 Genesis**

Study of the book of Genesis with attention to its exposition, historical setting, and meaning for Christians today, with special emphasis on teaching the book in a local church setting.

**CHR 421 The Gospels**

A survey of the four gospels, giving special attention to the life of Christ, as well as issues surrounding the similarities and differences between the gospels.

**CHR 422 The Pauline Epistles**

A survey of the Pauline Corpus, including exegetical study of selected Pauline Epistles.

**CHR 423 The General Letters**

A survey of the Non-Pauline letters, namely, James, Jude, 1-2 Peter, 1-3 John, and Hebrews.

**CHR 424 Acts**

A survey of Luke's second book, as not only a historical source about early Christianity but the origins and development of the church.

**CHR 427 Revelation**

Study of the book of Revelation with attention to its exposition, historical setting, and meaning for Christians today, with special emphasis on teaching Revelation in a local church setting.

**CHR/HUM 498 Senior Thesis Project**

Includes thesis research, presentation and defense. *(Required for BAH Degree students; optional for BACS Degree students).*

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### **CHR 499 *Imitatio Christi***

A course of applied Christian ministry done in imitation of Christ's example of servant leadership. Course includes a combination of classroom time and at least 105 hours of supervised work in a church, parachurch ministry, or other approved Christian organization or mission. *NOTE:* BA students who have not completed a cross-cultural *Basileia* (Kingdom) Mission must ensure that at least 40 hours of their *Imitatio Christi* service is cross-cultural.

### **COM 101 Oral Communication**

An investigation of basic principles of speech communication and their application to intrapersonal, interpersonal, small group, and public communication. Oral Communication is the first college course and assumes no previous speech training or experience. The course provides a practical interweaving of communication theory, principle and practice as it explores many of the communication situations the student encounters in his or her career, personal relationships and ministry. Intercultural considerations and ethical responsibility are integrated throughout the course.

### **ECO 201 Introduction to Economics**

This is an introductory course that teaches the fundamentals of economics. It provides a solid foundation for economic analysis and thinking that can last throughout the entire education and subsequent professional careers. The principles of economics are addressed with the dispassion of science. Chapters include case studies illustrating how the principles of economics are applied. Topics include markets, supply and demand, international trade, microeconomics, macroeconomics, firm behavior, monetary system, unemployment, and finance.

### **ECO 301 Principles of Finance and Budgeting**

Course introduces students to principles of financial planning and budgeting for churches, non-profits, families, and businesses.

### **ENG 101 College Composition I**

This is a college composition/writing intensive course. This course is a study of the fundamental skills involved in effective writing, based on selected readings (fiction, nonfiction, web writing, poetry, and short stories), summary and paraphrase, and ten written essays (synthesis, analysis, argumentation, and critique). Review of structure, purpose, and audience awareness is incorporated in developing essays. The final project is a six to eight-page research paper (not including title and reference pages) formatted in APA citation style. Effective use of the English language and exploration of rhetorical modes in written composition is emphasized, as well as analytical

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thinking, critical thinking, critical reading, and ethical incorporation of sources. Students participate in peer review and revision.

### **ENG 107 English Word Origins**

A study of the Latin and Greek roots of English primarily for the purpose of vocabulary-building. Covers noun, verb, and adjective roots/stems, as well as morphology, prefixes, and suffixes. Includes an overview of French and German elements in English and a brief history of the development of modern English. By attending to Latin and Greek technical terms and phrases that have come into English, students will appreciate the role of classical languages in shaping contemporary culture.

### **ENG/COM 111 Classical Rhetoric I**

As a prerequisite for ENG/COM 112 (Classical Rhetoric II), this course is a study of the fundamental skills involved in effective written or spoken oratory—Grammar and Logic. The first part of the course is an intensive, college-level review of all parts of English grammar, with special attention to the rhetorical choices involved in the composition of phrases, sentences, and paragraphs. The second part of the course studies the basic skills of critical thinking, with attention to informal fallacies, syllogistic logic, and the analysis of arguments in ordinary language. Throughout the course, the classical method of theory, imitation, and practice is employed.

### **ENG/COM 112 Classical Rhetoric II**

This course applies the fundamentals acquired in Classical Rhetoric I to the composition and delivery of complete speeches. Students learn the types and parts of rhetoric, the parts of the classical oration, and types of proof, and well as how to respond to different rhetorical situations. They practice techniques of delivery by presenting parts of speeches and entire speeches orally. Rhetorical skills are reinforced through the analysis and imitation of great speeches from history.

### **ENG/HUM 121 Ancient Literature**

Guided by the elements of literature as described by Aristotle, this course studies select works of ancient literature that laid deep and lasting cultural foundations. Through their macro- and micro-scopic patterns, probing questions about the human condition, and poignant but harsh realism, these works established basic patterns in Western mythology, philosophy, and art that have endured for two thousand years. (Possible readings: *Gilgamesh*, *Enuma Elish* and other Mesopotamian works; Hesiod's *Theogony* and *Works of Days*; Homer's *Iliad* and *Odyssey*, classical Greek tragedies; Virgil's *Aeneid*; ancient Chinese and Indian texts).

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### **ENG/HUM 122 Medieval Literature**

This course explores the ordered yet passionately imagined cosmos of the Middle Ages, a period of pageantry and deeply Christian meditation. Various political, moral, and theological themes will be investigated as we trace the classical epic tradition in its Medieval form. (Possible readings: Dante's *Divine Comedy*, *Beowulf*, Chaucer's *Canterbury Tales*, Spenser's *Faerie Queen*).

### **ENG 201 College Composition II**

This is a continuation of the college composition/writing intensive course. This course is a study of the fundamental skills involved in effective writing, based on selected readings (fiction, nonfiction, web writing, media writing, poetry, and short stories), summary and paraphrase, and ten written essays (synthesis, analysis, argumentation, and critique). Review of structure, purpose, and audience awareness is incorporated in developing essays. A six to eight-page research paper (not including title and reference pages) is the final project. Effective use of the English language and exploration of rhetorical modes in written composition is emphasized, as well as analytical thinking, critical reading, and ethical incorporation of sources. Students participate in peer review and revision. Additionally, they are instructed in APA citation style.

### **ENG/HUM 221 Renaissance and Baroque English Literature**

The Renaissance was a rich period of inheritance and innovation, with new worlds and words and old stories nurturing English literature. There are also troubling questions arising with the new science, the nation state, and other first stirrings of Modernity. This course continues to follow the epic tradition and traces the age's vibrant imagination into deep and beautiful places—knowledge and power, love and loyalty, politics and piety. (Possible readings: Spenser's *Faerie Queen*, various plays by Shakespeare, various lyrics from the Metaphysical Poets, Milton's *Paradise Lost*).

### **ENG/HUM 222 The Novel**

Arising in the 18<sup>th</sup> century and reaching its apex in the 19<sup>th</sup>, the novel became the new form of epic expression in an age of world conquest, industrialization, urbanization, and social upheaval. Whether in England, America, or Russia, we find novelists grappling with how to maintain relationships, virtue, and human dignity in an age of speed, technological progress, and increasing individualism. (Possible readings: novels by Austen, Dickens, Melville, Dostoyevsky, Faulkner, others).

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**GRK 211 Greek I**

An introduction to New Testament Greek letters and words. Koiné Greek (or “common Greek”) was a dominant language in the Mediterranean world and is the language of the New Testament and early church writers. Students of this class will learn the Greek alphabet and pronunciation, basic morphology of the Greek noun system, and the various functions of the most common vocabulary words used in the New Testament.

**GRK 212 Greek II**

An introduction to the New Testament (Koiné) Greek verbal system. Koiné Greek (or “common Greek”) was a dominant language in the Mediterranean world and is the language of the New Testament and early church writers. Students of this class will continue to build on their knowledge of Greek I and move on to learn the Greek verbal system, in particular indicative mood and participles. *Prerequisite:* GRK 211

**GRK 311 Greek III**

An in-depth study of New Testament Greek syntax. *Prerequisite:* GRK 211 and 212 or equivalent.

**GRK 312 Greek IV**

An introduction to New Testament exegesis, building off the principles of grammar and syntax from the previous three semesters. It includes both readings and exegetical case studies from the New Testament.

**HBR 311 Hebrew I**

An introduction to the elements of biblical Hebrew, with an emphasis on phonology, grammar, and vocabulary.

**HBR 312 Hebrew II**

A continuation of the elements of biblical Hebrew, with an emphasis on grammar and syntax, with selected readings from the Hebrew Bible. *Prerequisite:* HBR 311

**HIS 111 Ancient World**

An overview of the history and culture of ancient Greece from the Late Bronze Age through the Classical period and Roman Republic. Students will explore the foundational ideas, events, and images found in key works of literature and philosophy. Emphasis will be given to the ideas that directly impacted later developments within Western Civilization.

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### **HIS 112 Medieval World to Renaissance**

An examination of the transition from the Roman Empire to a Christian culture will be studied in light of its result on definitions of reality and humanity and the changes this brings to literature and philosophy.

### **HIS 211 American History I**

A survey of United States history from the late sixteenth century through to the mid-nineteenth century. Major topics include European colonization, the American Revolution, the crafting of the Constitution, the geographic expansion of the nation, and the Civil War. Students will examine (1) the influence of religion on U.S. political, economic, social, cultural, and ideological developments and (2) the evolution of ideas about race, gender, ethnicity, and social class and their influence on U.S. political, economic, social, cultural, and ideological developments.

### **HIS 212 American History II**

A survey of United States history from the mid-nineteenth century to the early twenty-first century. Major topics include Reconstruction, Immigration, Industrialization, Urbanization, U.S. Colonialism, Progressivism, World War I, the Great Depression, World War II, the Cold War, the Civil Rights/Women's Rights movements, and the U.S. in a post-Cold War period. Students will examine (1) the influence of religion on U.S. political, economic, social, cultural, and ideological developments and (2) the evolution of ideas about race, gender, ethnicity, and social class and their influence on U.S. political, economic, social, cultural, and ideological developments.

### **HUM/POL 313 Government and Politics**

A survey of western political philosophies that culminated in the crafting of the U.S. Constitution followed by a study of how evolving American political/cultural thought has influenced the changing relationship between Federal and State governments and America's sense of its place in the international arena.

**HUM 395 Special Topics in Humanities:** A study for enrichment and practical training in specialized areas of the humanities.

### **LAT 211 Latin I**

An introduction to the grammar, vocabulary, and pronunciation of classical Latin, covering roughly the first fifteen chapters of Wheelock's Latin, which includes the perfect active system of all verbs and the third declension of nouns. Pedagogy emphasizes reading as opposed to translation and the use of conversational Latin. Attention is given to work building in English from

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Latin roots - primarily nouns. Along the way, glimpses of the culture of ancient Rome reinforce the importance of Latin in the formation of the Western tradition and help to situate Latin in its native context. Vocabulary learning is aided by the study of derivatives, the reading of short stories (so that words are encountered in context), and a pictorial mnemonics. In addition to short passages of Classical Latin poetry and prose, students will translate brief passages from the Vulgate - the major Latin bible in the West for a thousand years - in order to appreciate the role of Latin in the Christian tradition.

### **LAT 212 Latin II**

Continues the study of Latin grammar and vocabulary through about chapter 30 of *Wheelock's Latin*, supplemented by the reading of excerpts from Roman literature, *Lingua Latina I*, and the Vulgate. Pedagogy emphasizes reading as opposed to translation and the use of conversational Latin. Attention is given to word building in English from Latin roots—primarily nouns. Along the way, glimpses of the culture of ancient Rome reinforce the importance of Latin in the formation of the Western tradition and help to situate Latin in its native context. *Prerequisite:* LAT 211

### **LAT 311 Latin III**

After covering selected topics in the final chapters of *Wheelock's Latin*, the course focuses on reading *The Gallic Wars* of Julius Caesar, ending with selections from the writings of Cicero. *Prerequisite:* LAT 212

### **LAT 312 Latin IV**

Begins with the reading of selections from Virgil's *Aeneid*. The second half of the course may include a survey of Christian literature in Latin, including selections from St. Augustine and medieval writings. *Prerequisite:* LAT 311

### **LDR 101 Leadership Foundations I: Spiritual Formation**

This is the initial foundational leadership course of John Witherspoon College's leadership curriculum. It introduces students to principles of leadership and spiritual formation with special attention to personal spiritual development. The course emphasizes each Christian's responsibility to lead wherever God has placed him/her.

### **LDR 200 Basileia (Kingdom) Mission (1)**

A cross-cultural, practical application of Christian ministry in diverse areas such as discipleship, Christian counseling, Bible study leadership, chaplaincy, street evangelism, hospital visitation, etc., with at least 40 hours of service. A position of service with a local church's cross-cultural ministry will satisfy this

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requirement if approved by the student's advisor and/or the Chief Academic Officer.

Students in a degree program will serve 40 hours. *Note:* LDR 200 may be combined with CHR 499 *Imitatio Christi*, or LDR 499 Senior Leadership Practicum, as long as the ministry service includes the minimum number of cross-cultural hours required by the student's degree program.

### **LDR 201 Leadership Foundations II: Becoming an Effective Leader**

Explores the characteristics, skills, and practices of effective leadership through the use of biographical case studies of a diverse array of individuals including male and female missionaries, politicians, military leaders, coaches, civil rights leaders, Native American chiefs, and laypersons. Students will begin to develop a biblical philosophy of leadership and to apply the principles of leadership and spiritual formation to their own lives as they hone their leadership skills for service to Christ and their communities.

*Prerequisite:* LDR 101 (or by permission of professor)

### **LDR 301 Leadership Foundations III: Leadership During Crises and Catastrophe**

This course explores the characteristics and practices of individuals, teams, and organizations that have resulted in crises and catastrophe. It will focus on leadership during planning, preparation, training, exercises, crises, post crisis recovery and transition by analyzing case studies of disasters such as the Apollo I fire, the loss of the shuttle Challenger, aircraft mishaps and other types of catastrophes. Students will begin to develop the leadership skills needed to prevent crises and to lead effectively when unavoidable crises occur. *Prerequisite:* LDR 101 and LDR 201 (or by permission of professor)

### **LDR 498 Leadership Immersion**

Students will spend up to 80 hours shadowing leaders at different organizational levels and in different types of organizations to witness how different leaders approach the daily challenges of their organization. Students will spend time in a small business, a large corporation, a military unit, a Christian organization, a political organization, and a non-profit service organization. *Prerequisite:* LDR 101 and permission by professor.

### **LDR 499 Senior Leadership Practicum**

Student will plan, develop, and execute a service project for the college, a local church or ministry, school, military unit, or local community. Student will apply the knowledge and skills learned throughout their program to assess needs, gather resources, organize a team, and lead the team in completing the project. *Prerequisite:* LDR 101, LDR 201, LDR 498, or by permission of the professor.

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### **MAT 100 Mathematical Thought for Liberal Arts**

This course focuses on mathematical thought and principles - discoverable truths that validate Sacred Scripture. Christianity has been a major influence on the mathematical sciences, particularly in the 17th and 18th centuries. There is a widespread belief that Christianity and science, particularly mathematical science, were on opposing sides through this period. However, this oversimplifies the situation to such an extent that it gives a misleading impression of the development of the mathematical sciences through this important time. For example, four men who perhaps did as much as any to revolutionize the mathematical sciences in the 16th and 17th centuries, Copernicus, Kepler, Galileo, and Newton, were all deeply religious Christians who in many ways saw their scientific work as a religious undertaking. In this course we look at theories of the structure of the universe and how religion reacted to major advances in the mathematical sciences on this issue.

### **MAT 102 College Algebra I**

A review of the fundamental concepts of the real number system, polynomials, factoring, rational expressions and complex numbers. It continues with linear equations and inequalities, graphs of functions, polynomial and rational functions, exponential functions and logarithmic functions, systems of equations, matrices, and determinants.

*Prerequisite:* MAT 101 or permission of the instructor

### **MAT 115 Advanced College Algebra**

Topics include: Polynomial, rational, exponential, and logarithmic functions and their graphs; systems of equations, inequalities and complex numbers. This course is designed for science students intending to take calculus.

*Prerequisite:* Placement or MAT 102

### **MAT 120 Trigonometry**

Trigonometric functions, identities and equations, triangle trigonometry, trigonometric inverses, graphing, advanced graphing, applications of sine and cosine, deriving addition formulas, polar coordinates. When paired with MAT 115, serves as a preparatory course for the calculus sequence.

*Prerequisite:* Placement or MAT 115

### **MAT 123 Calculus I (4)**

The study of limits, continuity, derivatives, applications of the derivative, antiderivatives, the definite and indefinite integral, and the fundamental theorem of calculus. *Prerequisite:* MAT 115 and MAT 120, or placement

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**MAT 125 Calculus II (4)**

A continuation of the study of calculus, including the study of sequences, series, polar coordinates, parametric equations, techniques of integration, applications of integration, indeterminate forms, and improper integrals.

*Prerequisite:* MAT 123

**MAT 208 Intro to Statistics and Probability**

An introductory course in statistics and probability designed to familiarize the student to this as observed and experienced in everyday life in newspapers, on TV and on the internet. Course topics will include data collection and analysis, through frequency distribution tables, graphs and the normal curve. In order to understand these topics we must define several measures of central tendency, standard deviation and basic probability.

*Prerequisite:* Two credits of high school mathematics.

**MUS 316 Music Colloquium**

A foundational study of music history, theory, and practice. This course surveys the great epochs in the history of Western music, with special attention to sacred music. The course presents basic music theory and the principles of polyphony, as well as techniques of vocal performance. Participation in a vocal ensemble is required.

**PE 195 Physical Skill I (1)**

A self-directed course in which students study best practices for physical conditioning and safety guidelines related to a physical fitness activity of their choice. Students participate in their selected activity and maintain a log of hours. The physical activities will vary; credit hours will be based on contact (activity) hours.

**PE 196 Physical Skill II (2)**

A self-directed course in which students study best practices for physical conditioning and safety guidelines related to a physical fitness activity of their choice. Students participate in their selected activity and maintain a log of hours. The physical activities will vary; Credit hours will be based on contact (activity) hours.

**PE 197 Physical Skill III (3)**

A self-directed course in which students study best practices for physical conditioning and safety guidelines related to a physical fitness activity of their choice. Students participate in their selected activity and maintain a log of hours. The physical activities will vary; credit hours will be based on contact (activity) hours.

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**PHL 101 Introduction to Philosophy**

An introductory course in philosophy designed to acquaint the student with the major fields of philosophical study through some of the classic texts, authors, and periods of the Western tradition.

**PHL 243 Ethics/Moral Decision Making**

An introduction to Christian ethics, focusing on ethical methodology. The course begins with a survey and comparison of philosophical, secular, and a theistic perspective on the moral life, then moves on to develop a comprehensive evangelical approach to moral decision making.

**PHL 349 World Religions**

An examination of the history, philosophy/theology, and sociology of the major world religions. Special attention is given to Judaism, Islam, indigenous religions, Hinduism, Buddhism, Daoism, Confucianism, and some less-well-known religions and Christian cults. Projects, quizzes, and presentations culminate in a written paper on one's own theology of religions.

**PHL 438 Science and Faith**

An exploration of the major scientific concepts guiding modern science in relationship to the major faith commitments of the Christian faith as expressed in the gospel and the creeds in an effort to produce constructive dialogue that will mutually inform the two ways of knowing. Concepts explored include cosmology, evolution, quantum physics, and chaos theory. Doctrines explored include creation, revelation, incarnation, salvation, exaltation, and eschatology as they relate to specific scientific concerns.

**PSY 101 Psychology Colloquium**

A study of psychology as a science with special emphasis on the integration of psychology with biblical truth. The origins, assumptions, techniques, instruments, and methods of psychology are studied and related to Scripture.

**SCI 111 Physical Science w/Lab (4)**

An introduction to earth science including its historical, philosophical, and social significance with a focus on practical applications, critical thinking, and modern-day issues. A lab and field trips will be included. Course topics include: Basic physical and historical geology concepts; geodesy and coordinate systems; atoms, elements, and mineralogy; igneous rocks and intrusive activity; sedimentary rocks and sedimentation; metamorphism and metamorphic rocks; age dating – geologic time; reading and making geologic maps; origins creation and evolution; basic concepts in geophysics; basic concepts in climate change theory; resources and mining; energy mix –

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baseload and renewables; oil and gas exploration, production and storage; fracking and induced seismicity; and geothermal energy exploration and uses.

### **SCI 112 Life Science w/Lab (4)**

This course comprises an introduction into the life sciences from the vantage of human cellular biology with emphasis on the universal features of life from the molecular level to that of specialized cells. The course emphasis will be on key concepts developed from classic experiments in the areas of cellular and molecular biology. Correlations will be drawn between normal biologic function and dysfunction found in human disease. Prior classes in high school biology and chemistry are recommended. A lab will be included.

*Extended course description:* The purpose of this course is to provide an overview of the molecular and cellular biology of human life. Special emphasis will be given to how the genetic blueprint is read and translated into the structural and functional body systems that make up the whole person. Classic experiments and specific disease conditions will be used to illustrate points of the course. Students will utilize contemporary texts to discuss how the life sciences reveal the elegant mastery of God.

The lab section will cover basic techniques in molecular biology, namely, DNA extraction/amplification/analysis, and recombinant methods to translate gene products. The overall goal is to give students experience in a longitudinal project with multiple steps utilizing the scientific method.

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