In this document, dual credit courses are organized into two lists: “On the Allen High School Campus” and “On the Collin College Campus.” Courses offered on the Allen High School Campus are listed first, followed by courses offered on the Collin College Campus. Courses are listed in alpha order by course number for both sections.

For more details in regards to dual credit admission, enrollment, etc., please access the Dual Credit section of the AHS Course Selection and Graduation Planning website.

For prerequisite requirements, please access the online Course Catalog section of the AHS Course Selection and Graduation Planning website. Classes are organized by content area underneath the Course Catalog tab.

On the Allen High School Campus:

**CHEF 1305 Sanitation and Safety**
A study of personal cleanliness; sanitary practices in food preparation; causes, investigation, control of illness caused by food contamination (Hazard Analysis Critical Control Points); and work place safety standards. 3 credit hours.

**CPMT 1305 IT Essentials I: PC Hardware and Software**
Provides comprehensive overview of computer hardware and software and an introduction to advanced concepts. Lab required. 3 credit hours.

**DFTG 1309 Basic Computer-Aided Drafting**
An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinating systems; and plot/print to scale. Lab required. 3 credit hours.

**DFTG 2319 Intermediate Computer-Aided Drafting**
A continuation of practices and techniques used in basic computer-aided drafting including the development and use of prototype drawings, construction of pictorial drawings, extracting data, and basics of 3d. Lab required. Prerequisite: DFTG 1309. 3 credit hours.

**ECON 2302 Principles of Microeconomics**
Analysis of the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures, factor markets, market failures, and international trade. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.

**EMSP 1371 Introduction to Emergency Medical Technician (EMT)**
Introduction to Emergency Medical Services including: history, organization and function, legal aspects, and ethics. Overview of human anatomy and physiology, patient assessment, airway
control, and infection control techniques. Prerequisite: Consent of Program Director. Corequisite: EMSP 1160 and 1501. 3 credit hours.

**EMSP 1501 Emergency Medical Technician**
Preparation for certification as an Emergency Medical Technician (EMT). Lab required. Prerequisite: Consent of Program Director. Corequisite: EMSP 1160. 5 credit hours.

**EMSP 1160 Clinical - Emergency Medical Technician (EMT Paramedic) - Basic**
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Consent of Program Director. 1 credit hour.

**ENGL 1301 Composition I**
Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus on writing the academic essay as a vehicle for learning, communicating, and critical analysis. Lab required. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.

**ENGL 1302 Composition II**
Intensive study of and practice in the strategies and techniques for developing research-based expository and persuasive texts. Emphasis on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual, and multimedia texts; systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. Lab required. Prerequisite: ENGL 1301. 3 credit hours.

**ENGL 2332 World Literature I**
A survey of world literature from the ancient world through the sixteenth century. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

**ENGL 2333 World Literature II**
A survey of world literature from the seventeenth century to the present. Students will study works of prose, poetry, dramas, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

**ENGR 1201 Introduction to Engineering**
An introduction to the engineering profession with emphasis on technical communication and team-based engineering design. Prerequisite: MATH 1314 or equivalent academic preparation. 2 credit hours.
GOVT 2305 Federal Government
Origin and development of the U.S. Constitution, structure and powers of the national government including the legislative, executive, and judicial branches, federalism, political participation, the national election process, public policy, civil liberties and civil rights. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.

HIST 1301 U.S. History I
A survey of the social, political, economic, cultural, and intellectual history of the United States from the pre-Columbian era to the Civil War/Reconstruction period. United States History I includes the study of pre-Columbian, colonial, revolutionary, early national, slavery and sectionalism, and the Civil War/Reconstruction eras. Themes that may be addressed in United States History I include: American settlement and diversity, American culture, religion, civil and human rights, technological change, economic change, immigration and migration, and creation of the federal government. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.

HIST 1302 U.S. History II
A survey of the social, political, economic, cultural, and intellectual history of the United States from the pre-Columbian era to the Civil War/Reconstruction period to the present. United States History II examines industrialization, immigration, world wars, the Great Depression, Cold War, and post-Cold War eras. Themes that may be addressed in United States History II include: American culture, religion, civil and human rights, technological change, economic change, immigration and migration, urbanization and suburbanization, the expansion of the federal government, and the study of U.S. foreign policy. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.

ITNW 1358 Network +
Assists individuals in preparing for Computing Technology Industry Association (CompTIA) Network + certification exam and career as a network professional. Prepares individuals for a career as a Network Engineer in the Information Technology support industry. Includes the various responsibilities and tasks required for service engineer to successfully perform in a specific environment. Lab required. 3 credit hours.

MATH 1314 College Algebra
In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. Graphing calculator required. Lab required. Prerequisite: Met TSI college-readiness standard for Mathematics; or equivalent. 3 credit hours.

MATH 1316 Plane Trigonometry
In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as
vectors, polar coordinates and parametric equations may be included. Graphing calculator required. Prerequisite: MATH 1314 or MATH 1414; or equivalent. 3 credit hours.

**RBTC 1305 Robotics Fundamentals**
An introduction to flexible automation. Topics include installation, repair, maintenance, and development of flexible robotic manufacturing systems. 3 credit hours.

**SPCH 1311 Introduction to Speech Communication**
Introduces basic human communication principles and theories embedded in a variety of contexts including interpersonal, small group, and public speaking. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.

**On the Collin College Campus:**

**BIOL 1414 Introduction to Biotechnology I**
Overview of classical genetics, DNA structure, the flow of genetic information, DNA replication, gene transcription, protein translation. Principles of major molecular biology and genetic engineering techniques, including restriction enzymes and their uses, major types of cloning vectors, construction of libraries, Southern and Northern blotting, hybridization, PCR, DNA typing. Applications of these techniques in human health and welfare, medicine, agriculture and the environment. Introduction to the human genome project, gene therapy, molecular diagnostics, forensics, creation and uses of transgenic plants and animal and animal cloning and of the ethical, legal, and social issues and scientific problems associated with these technologies. Relevant practical exercises in the above areas. Lab required. Prerequisite: Meet TSI standard for MATH 0310, and TSI college-readiness standard for Reading and Writing: or equivalent. 4 credit hours.

**BIOL 1415 Introduction to Biotechnology II**
Lecture to focus on an integrative approach to study biomolecules with an emphasis on protein structures, functions and uses in the modern bioscience laboratory. Students will investigate the mechanisms involved in the transfer of information from DNA sequences to proteins to biochemical functions. The course will integrate biological and chemical concepts with techniques that are used in research and industry. Critical thinking will be applied in laboratory exercises using inquiry-based approaches, troubleshooting and analyzing experimental data. Lab required. Prerequisite/Concurrent enrollment: BIOL1414. 4 credit hours.

**CETT 1303 DC Circuits**
A study of the fundamentals of direct current including Ohm's law, Kirchoff's laws and circuit analysis techniques. Emphasis on circuit analysis of resistive networks and DC measurements. Lab required. 3 credit hours.
CETT 1305 AC Circuits
A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance. Lab required. Prerequisite: CETT 1303 or consent of Instructor or Program Director. 3 credit hours.

DFTG 2332 Advanced Computer-Aided Drafting
Application of advanced CAD techniques. Lab required. Prerequisite: DFTG 2319. 3 credit hours.

ENGR 1304 Engineering Graphics
Introduction to computer-aided drafting using CAD software and sketching to generate two- and three-dimensional drawings based on the conventions of engineering graphical communication; topics include spatial relationships, multi-view projections and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics. Lab required. Prerequisite: MATH1314 or equivalent academic preparation. 3 credit hours.

ENGT 1407 Digital Fundamentals
Digital logic circuits and techniques. Analysis, design and simulation of combinational and sequential systems using: classical Boolean algebra techniques, laboratory hardware experiments and computer simulation. Introduction to programmable logic devices (PLDs) and application-specific integrated circuits using software tools for the design and analysis of digital logic circuits and systems. Lab required. Prerequisite: COSC 1436 or consent of Instructor or Program Director. 4 credit hours.

ENVR 1401 Environmental Science I
Lecture: A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. Lab: Activities will cover methods used to collect and analyze environmental data. Lab required. Prerequisite: Meet TSI standard for MATH 0310, and TSI college-readiness standard for Reading and Writing; or equivalent. 4 credit hours.

ENVR 1402 Environmental Science II
Continued interdisciplinary study of both natural (biology, chemistry, geology) and social (economics, politics, ethics) sciences as they apply to the environment. Focus on energy issues, global warming, ozone loss, land use, conservation and management, deforestation, biodiversity, the history of environmental law and regulation and local environmental problems. Lab required. Prerequisite: ENVR 1401. 4 credit hours.

INDS 1301 Basic Elements of Design
A study of basic design concepts with projects in shape, line, value, texture, pattern, spatial illusion, and form. Lab required. 3 credit hours.
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INDS 1341 Color Theory and Applications
A study of color theory and its applications to interior design. Actual interior design will be
given that will involve applying various color systems, with emphasis on Munsell. The student
will learn mixing techniques to gain desired hue; value and chroma (intensities) for solving
design color schemes. Color psychology and phenomena will be investigated. The students will
be introduced to elements and principles of design and will learn to achieve balance, rhythm,
emphases, harmony, and variety through the use of color. Additive and subtractive color mixing
and relationship of light will be examined. Lab required. 3 credit hours.

INDS 1371 Introduction to Green Design
A general study of Green Design and sustainable environment. Explore the basic principles of
Green/Sustainable Design including passive solar, alternative energy, green water technology,
recycling, green building certification outline, and interior air quality in built environment. Lab
required. 3 credit hours.

INDS 1375 Green Building Certification Training
The course provides a review of Green Building Certification and the Principles involved in
Green Building Certification in preparation for sitting for a certification examination
administered by an outside organization or agency. Prerequisites: DFTG 1309 and INDS 1371. 3
credit hours.

ITCC 1371 CCNA 1 Cisco – Introduction to Networks
A course introducing the architecture, structure, functions, components, and models of the
internet. Describes the use of OSI and TCP layered models to examine the nature and roles of
protocols and services at the application, network, data link, and physical layers. Covers the
principles and structure of IP addressing and the fundamentals of Ethernet concepts, media,
and operations. Explains IPv6 Network Addresses, Design Considerations for IPv6, Managing IOS
Configuration Files, and Integrated Routing Services. Build simple LAN topologies by applying
basic principles of cabling; perform basic configurations of network devices, including routers
and switches; and implementing IP addressing schemes. Lab required. 3 credit hours.

ITCC 1374 CCNA 2 – Routing and Switching Essentials
This course describes the architecture, components, and operation of routers, and explains the
principles of routing and routing protocols. Students analyze, configure, verify, and
troubleshoot the primary routing protocols and OSPF. Recognize and correct common routing
issues and problems. Model and analyze routing processes. This course also describes the
architecture, components, and operation of switches, and explains the principles of switching,
VLANs and Inter-VLAN routing. The essentials of security, address translation and DHCP are also
described. Lab required. Prerequisite: ITCC 1371. 3 credit hours.

ITCC 2371 CCNA 3 – Scaling Networks
This course helps students develop an in-depth understanding of how switches operate and are
implemented in the LAN environment for small & large networks, how routers operate and are
implemented in the LAN environment for small and large networks. Detailed explanations of LAN switch operations, Rapid Spanning Tree Protocol (RSTP), router operations, DHCP, Link Aggregation, EIGRP, Multi-Area OSPF, and IOS File Management and wireless network operations. Analyze, configure, verify, and troubleshoot RSTP, DHCP, Link Aggregation, EIGRP, Multi-Area OSPF and wireless networks. Lab req. Prerequisite: ITCC1374. 3 credit hours.

**ITCC 2372 CCNA 4 – Connecting Networks**
This course explains the principles of traffic control Borderless Networks, Virtualization, Collaboration, Tunneling, IPSec VPN, Syslog Operation, SNMP Operation and provides an overview of the services and protocols at the data link layer for wide-area access. Describes user access technologies and devices and discover how to implement and configure Point-to-Point Protocol (PPP), Point-to-Point Protocol over Ethernet (PPPoE), DSL, and Frame Relay. WAN security concepts, tunneling, and VPN basics are introduced. Discuss the special network services required by converged applications and an introduction to quality of service (QoS). Lab required. Prerequisite: ITCC2371. 3 credit hours.

**ITSY 1300 Fundamentals of Information Security (Security +)**
An introduction to information security including vocabulary and terminology, ethics, the legal environment, and risk management. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. The importance of appropriate planning, policies and controls is also discussed. Lab required. Prerequisite: ITNW 1358. 4 credit hours.

**PHYS 1403 Stars and Galaxies**
Introduction to stars and galaxies; basic tools and concepts in astronomy and physics are discussed. Subjects studied include stellar evolution, supernovae, black holes, neutron stars, galaxies, and quasars. Laboratory exercises, night observations, planetarium and observatory visits combine to enhance lecture material. Lab required. Prerequisite: Meet TSI standard for MATH 0310, and TSI college-readiness standard for Reading; or equivalent. 4 credit hours.

**PHYS 1404 Solar System**
Introduction to the solar system; basic tools and concepts in astronomy and physics are discussed. Subjects studied include planets, moons, asteroids, comets, solar system formation, and solar system exploration. Laboratory exercises, night observations, planetarium and observatory visits combine to enhance lecture material. Lab required. Prerequisite: Meet TSI standard for MATH 0310, and TSI college-readiness standard for Reading; or equivalent. 4 credit hours.

**PSYC 2301 General Psychology**
General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.
SMFT 1371 Fundamentals of Solar Cell Engineering
The chemistry, device physics, and materials science of Photovoltaic Solar Cell technology which results in the production of electricity from sunlight is covered. An overview of the process flows used to manufacture solar cells, the resulting device characteristics, the variety of solar cell structures and the solid state electronics characterization of the structures is presented. The course is taught from an engineering perspective using an appropriate level of mathematics for the engineering models presented. Lab required. Prerequisite: MATH1314 or Consent of Program Director. 3 credit hours.

SOCL 1301 Introduction to Sociology
The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance. Prerequisite: Meet TSI college-readiness standard for Reading and Writing; or equivalent. 3 credit hours.