



McKenzie Center for Innovation & Technology

2026 - 2027 Curriculum Guide

“Where Everything Is Possible.”

Mr. Chauntee L. Smith, Director
Ms. Elyce Bonds, Assistant Director

The McKenzie Center for Innovation and Technology (MCIT) serves students in grades 9-12 at Lawrence Central HS and Lawrence North HS in the pursuit of Career and Technical Education. Spanning 10+ industries, our 32+ pathways offer our students a wide variety of experiences that prepare them for post-secondary success. This curriculum guide, a key resource for counselors, teachers, parents, and students, details our comprehensive offerings. At MCIT, students engage with state-of-the-art equipment and diverse programs, preparing them for various future pursuits including enrollment, enlistment, and/or employment. Our approach combines a nurturing environment and innovative technology, a blend that garners consistent praise from our students for the unique advantages we offer in their educational journey.

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Business Management, Marketing, & Finance

Accounting Pathway

Principles of Business Management (4562)	Accounting Fundamentals (4524)	Advanced Accounting (4522)	Accounting Capstone (7252)
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4562 Principles of Business Management

Principles of Business Management examines business ownership, organization principles and problems, management, control facilities, administration, financial management, and development practices of business enterprises. This course will also emphasize the identification and practice of the appropriate use of technology to communicate and solve business problems and aid in decision making. Attention will be given to developing business communication, problem-solving, and decision-making skills using spreadsheets, word processing, data management, and presentation software.

- Grade(s): 9, 10
- Campus: LN, LC
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or elective for all diplomas
- Dual Credit Alignment: IVYT - BUSN 101 - Introduction to Business Management (3)
- NLPS Alignment: Principles Course
- Industry Certification: None
- Weight: +1.0

4524 Accounting Fundamentals

Accounting Fundamentals introduces the language of business using Generally Accepted Accounting Principles (GAAP) and procedures for proprietorships and partnerships using double-entry accounting. Emphasis is placed on accounting principles as they relate to both manual and automated financial systems. This course involves understanding, analyzing, and recording business transactions and preparing, analyzing, and interpreting financial reports as a basis for decision-making.

- Grade(s): 10, 11
- Campus: MCIT
- Required Prerequisites: Principles of Business Management
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Dual Credit Alignment: IVYT - ACCT101 - Financial Accounting (3)
- NLPS Alignment: Concentrator A Course (Accounting Pathway) / Concentrator B Course (Bus. Admin Pathway)
- Industry Certification: None
- Weight: +1.0

4522 Advanced Accounting

Advanced Accounting expands on the Generally Accepted Accounting Principles (GAAP) and procedures for various forms of business ownership using double-entry accounting covered in Accounting Fundamentals, including an emphasis on payroll accounting. Topics covered include calculating gross pay, withholdings, net pay, direct deposits, journalizing payroll transactions and preparing individual earnings records and payroll registers. Emphasis is placed on applying Generally Accepted Accounting Principles through hands-on practice with popular commercial accounting software packages that are currently used in business.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Business Management; Accounting Fundamentals
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - ACCT106 - Payroll Accounting (3) / IVYT - ACCT122 - Accounting Systems Applications (3)
- Counts as a quantitative reasoning course
- NLPS Alignment: Concentrator B Course
- Industry Certification: QuickBooks Certified User (108727)
- Weight: +1.0

7252 Accounting Capstone

The Accounting Capstone course will emphasize Managerial Accounting concepts and Income Tax Accounting for individuals and sole proprietorships. Topics include general versus cost accounting systems, cost behavior, cost-volume profit analysis, budgeting, standard cost systems, responsibility accounting, incremental analysis, and capital investment analysis. Offers an overview of federal and state income tax law for individuals including taxable income, capital gains and losses, adjustments, standard and itemized deductions, tax credits and appropriate tax forms. When offered for multiple credits per semester, the Accounting Capstone may be used to provide students the opportunity to participate in an intensive work-based learning experience and/or to complete additional coursework in using spreadsheets to solve accounting cases and to complete a postsecondary credential from ITCC or VU.

- Recommended Grade(s): 12
- Campus: MCIT
- Required Prerequisites: Principles of Business Management; Accounting Fundamentals; Advanced Accounting
- 2 Block Course
- Credits: 2 semester course, 2 semesters required, 2 credits per semester, 4 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- Counts as a quantitative reasoning course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT ACCT205 - Income Tax (3)/IVYT ACCT 102 - Managerial Accounting (3)
- NLPS Alignment: Capstone
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Business Administration Pathway

Principles of Business Management (4562)	Management Fundamentals (7143)	Accounting Fundamentals (4524)	Business Administration Capstone (7256)
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4562 Principles of Business Management

Principles of Business Management examines business ownership, organization principles and problems, management, control facilities, administration, financial management, and development practices of business enterprises. This course will also emphasize the identification and practice of the appropriate use of technology to communicate and solve business problems and aid in decision making. Attention will be given to developing business communication, problem-solving, and decision-making skills using spreadsheets, word processing, data management, and presentation software.

- Grade(s): 9, 10
- Campus: LN, LC
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or elective for all diplomas
- Dual Credit Alignment: IVYT - BUSN 101 - Introduction to Business Management (3)
- NLPS Alignment: Principles Course
- Industry Certification: None
- Weight: +1.0

7143 Management Fundamentals

Management Fundamentals describes the functions of managers, including the management of activities and personnel. Describes the judicial system and the nature and sources of law affecting business. Studies contracts, sales contracts with emphasis on Uniform Commercial Code Applications, remedies for breach of contract and tort liabilities. Examines legal aspects of property ownership, structures of business ownership, and agency relationships.

- Grade(s): 10, 11
- Required Prerequisites: Principles of Business Management
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT BUSN 105 - Principles of Management (3) / IVYT BUSN 201 - Business Law (3)
- NLPS Alignment: Concentrator A Course
- Industry Certification: None
- Weight: +1.0

4524 Accounting Fundamentals

Accounting Fundamentals introduces the language of business using Generally Accepted Accounting Principles (GAAP) and procedures for proprietorships and partnerships using double-entry accounting.

Emphasis is placed on accounting principles as they relate to both manual and automated financial systems. This course involves understanding, analyzing, and recording business transactions and preparing, analyzing, and interpreting financial reports as a basis for decision-making.

- Grade(s): 10, 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Business Management
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or elective all diplomas
- Dual Credit Alignment: IVYT - ACCT101 - Financial Accounting (3)
- NLPS Alignment: Concentrator A Course (Accounting Pathway) / Concentrator B Course (Bus. Admin Pathway)
- Industry Certification: None
- Weight: +1.0

7256 Business Administration Capstone

The Business Administration Capstone course will allow students to explore advanced topics in business leadership including Human Resources and International Business. Additionally students will have the chance to complete Managerial Accounting. Throughout the course students will develop business communication skills through work on projects, labs, and simulations. All of these courses represent key business competencies required by nearly all postsecondary Business schools.

- Grade(s): 12
- Campus: MCIT
- Required Prerequisites: Principles of Business Management, Management Fundamentals, Accounting Fundamentals
- 2 Block Course
- Credits: 2 semester course, 2 semesters required, 2 credits per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Dual Credit Alignment: IUB - BUS-X 100 - Business Administration: Introduction (3)
- NLPS Alignment: Capstone
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Entrepreneurship Pathway

Principles of Entrepreneurship (7154)	Entrepreneurial Operations (7147)	New Venture Development (7148)	Small Business Operations Capstone (7201)
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7154 Principles of Entrepreneurship

Principles of Entrepreneurship focuses on students learning about their own strengths, character and skills and how their unique abilities can apply to entrepreneurship, as well as how an entrepreneurial mindset can serve them regardless of their career path. Students will learn about the local, regional and

state resources and will begin to understand and apply the entrepreneurial process. The course helps students to identify and evaluate business ideas while learning the steps and competencies required to launch a successful new venture. The course helps students apply what they have learned from the content when they write a Personal Vision Statement, a Business Concept Statement, and an Elevator Pitch.

- Grade(s): 9, 10
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - ENTR 100 - Entrepreneurial Foundation (3) / IVYT - ENTR 200 - Entrepreneurial Mindset (3)
- NLPS Alignment: Principles Course
- Industry Certification: None
- Weight: +1.0

7147 Entrepreneurial Operations

Entrepreneurial Operations will focus on key marketing strategies particularly relevant to new ventures. Students will develop an understanding of marketing, advertising, social media, and branding. Upon successful completion of this course, the student should be able to identify and evaluate the various sources available for funding a new enterprise; demonstrate an understanding of financial terminology; read, prepare, and analyze basic financial statements; estimate capital requirements and risk, exit strategies; and prepare a budget for their business. In addition, the student should be able to explain the importance of working capital and cash management. The student should also be able to identify financing needs and prepare sales forecasts.

- Recommended Grade(s): 10, 11
- Campus: MCIT
- Required Prerequisites: Principles of Entrepreneurship
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - ENTR 105 - Entrepreneurial Lean Marketing (3) / ENTR 205 Financial Foundations for Entrepreneurs (3)
- NLPS Alignment: Concentrator A Course
- Industry Certification: None
- Weight: +1.0

7148 New Venture Development

New Venture Development is targeted to students interested in creating and growing their own businesses. The course will focus on key marketing strategies particularly relevant for new ventures including the appropriate business structure and organization, developing plans and strategies for the entrepreneurial venture, financing strategies, exploring growth opportunities, and successfully managing scarce resources. Students will explore buy/sell/lease negotiations, insurance, logistics, and technology use. By the end, students will be well-prepared to tackle the challenges of small business management

and entrepreneurship.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Entrepreneurship; Entrepreneurial Operations
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - ENTR 215 - New Ventures (3) / IVYT - ENTR 218 - New Venture Launch (3)
- NLPS Alignment: Concentrator B Course
- Industry Certification: None
- Weight: +1.0

7201 Small Business Operations Capstone

The Small Business Operations Capstone is an applied course, and students will be implementing the correct legal, business, human resources, operations, marketing and financial structures after de-risking their idea and launching their business.

- Recommended Grade(s): 12
- Required Prerequisites: Principles of Entrepreneurship; New Venture Development, Small Business Operation
- 2 Block Course
- Credits: 2 semester course, 2 semesters required, 2 credit per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - ENTR 220 - Small Business Operations (3)
- NLPS Alignment: Capstone
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Marketing & Sales Pathway

Principles of Business Management (4562)	Marketing Fundamentals (5914)	Strategic Marketing (5918)	Business Management Capstone (7201)
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4562 Principles of Business Management

Principles of Business Management examines business ownership, organization principles and problems, management, control facilities, administration, financial management, and development practices of business enterprises. This course will also emphasize the identification and practice of the appropriate use of technology to communicate and solve business problems and aid in decision making. Attention will be given to developing business communication, problem-solving, and decision-making skills using

spreadsheets, word processing, data management, and presentation software.

- Grade(s): 9, 10
- Campus: LN, LC
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Dual Credit Alignment: IVYT - BUSN 101 - Introduction to Business Management (3)
- NLPS Alignment: Principles Course
- Industry Certification: None
- Weight: +1.0

5914 Marketing Fundamentals

Marketing Fundamentals provides a basic introduction to the scope and importance of marketing in the global economy. Course topics include the seven functions of marketing: promotion, channel management, pricing, product/service management, market planning, marketing information management, and professional selling skills. Emphasis is marketing content but will involve use of oral and written communications, mathematical applications, problem-solving, and critical thinking skills through the development of an integrated marketing plan and other projects.

- Grade(s): 10, 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Business Management
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - MKTG 101 - Principles of Marketing (3)
- NLPS Alignment: Concentrator A
- Industry Certification: None
- Weight: +1.0

5918 Strategic Marketing

Strategic Marketing builds upon the foundations of marketing and applies the functions of marketing at an advanced level. Students will study the basic principles of consumer behavior and examine the application of theories from psychology, social psychology, and economics. The relationship between consumer behavior and marketing activities will be reviewed.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Business Management, Marketing Fundamentals
- Credits: 2 semester course, 2 semesters required, 1-2 credits per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - MKTG 230 - Consumer Behavior (3)
- NLPS Alignment: Concentrator B
- Industry Certification: None
- Weight: +1.0

7201 Small Business Operations Capstone

The Small Business Operations Capstone is an applied course, and students will be implementing the correct legal, business, human resources, operations, marketing and financial structures after de-risking their idea and launching their business.

- Recommended Grade(s): 12
- Campus: MCIT
- Required Prerequisites: Principles of Entrepreneurship; New Venture Development, Small Business Operation
- 2 Block Course
- Credits: 2 semester course, 2 semesters required, 2 credit per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Dual Credit Alignment: IVYT - ENTR 220 - Small Business Operations (3)
- NLPS Alignment: Capstone
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Education

Early Childhood Education

Principles of Early Childhood Ed. (7160)	[DOUBLE BLOCK] ECE Curriculum (7158) + ECE Guidance (7159)	[TRIPLE BLOCK] Early Childhood Ed Capstone (7259)
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7160 Principles of Early Childhood Education

This course provides students with an overview of skills and strategies necessary to successfully complete a certificate. Additionally, it provides an overview of the history, theory, and foundations of early childhood education as well as exposure to types of programs, curricula and services available to young children. This course also examines basic principles of child development, Developmentally Appropriate Practices (DAP), importance of family, licensing, and elements of quality care of young children with an emphasis on the learning environment related to health, safety, and nutrition. Students may be required to complete observations and field experiences with children as part of this course.

- Grade(s): 9, 10, 11
- Campus: LNHS, LCHS
- Required Prerequisites: None
- 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Course Aligned with Postsecondary Courses for Dual Credit through Indiana State University
- Dual Credit Alignment: ISU - ELED 110 - Principles of Early Childhood Education (3)
- Industry Certification: None
- Weight: +1.0

7158 Early Childhood Education Curriculum

Early Childhood Education Curriculum examines developmentally appropriate environments and activities in various childcare settings while exploring the varying developmental levels and cultural backgrounds of children. Students may be required to complete observations and field experiences with children as related to this course.

- Grade(s): 10, 11, 12
- Campus: Skiles Test Elementary through MCIT
- 2 Block Course: 1st Block - 7158 Early Childhood Education Curriculum, 2nd Block – 7159 Early Childhood Education Guidance
- Required Prerequisites: Principles of Early Childhood Education
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator A Course
- Course Aligned with Postsecondary Courses for Dual Credit through Indiana State University
- Dual Credit Alignment: ISU - ELED 220 - Early Childhood Education Curriculum (3)

- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

7159 Early Childhood Education Guidance

This course allows students to analyze developmentally appropriate guidance, theory and implementation for various early care and education settings. It also provides a basic understanding of the anti-bias/multicultural emphasis in the field of early childhood. Students may be required to complete observations and field experiences with children as part of this course.

- Grade(s): 10, 11, 12
- Campus: Skiles Test Elementary through MCIT
- 2 Block Course: 1st Block - 7158 Early Childhood Education Curriculum, 2nd Block – 7159 Early Childhood Education Guidance
- Required Prerequisites: Principles of Early Childhood Education, Early Childhood Ed Curriculum
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Indiana State University
- Dual Credit Alignment: ISU - ELED 432 - Early Childhood Education Guidance (3)
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

7259 Early Childhood Education Capstone

This course will prepare students to complete the application, CDA exam, and verification process for the Child Development Associate (CDA) credential. Students may also study the physical, social, emotional, cognitive, and moral development of children from conception to age twelve. Theories of child development, biological and environmental foundations, prenatal development, the birth process, and the newborn baby will be discussed. Additionally, students will explore the aspects of early literacy skill development in young children from birth through third grade. Students will explore techniques, technological tools and other learning opportunities that encourage positive attitudes in children regarding listening, speaking, reading and writing activities. In the course, students will research, examine and explore the use of observation in screening and assessment to promote healthy literacy development in early childhood education. Finally, students will be provided an introduction to caring for each exceptional child. This includes theories and practices for producing optimal developmental growth. Students may be required to complete observations and field experiences with children as part of this course.

- Grade(s): 11, 12
- Campus: Brook Park - ELC through MCIT
- 3 Block Course
- Required Prerequisites: Principles of Early Childhood Education, Early Childhood Education Curriculum, Early Childhood Education Guidance
- Credits: 2 semester course, 2 semesters required, 3 credits per semester, 6 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone
- Course Aligned with Postsecondary Courses for Dual Credit through Indiana State University

- Dual Credit Alignment: ISU - EPSY 202 - The Psychology of Childhood and Adolescence (3) / ISU - SPED 226 - The Exceptional Learner in the Regular Classroom (3)
- Industry Certification: Child Development Associate (CDA)
- Work-based Learning Experience
- Weight: +1.0

Health Sciences

Biomedical Science & Technology Pathway

Principles of Biomedical Sciences (5218)	Anatomy & Physiology (5276)	Medical Interventions (5217)	Biomedical Innovations (5219)
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5218 Principles of Biomedical Sciences

Principles of the Biomedical Sciences provides an introduction to this field through “hands-on” projects and problems. Student work involves the study of human medicine, research processes and an introduction to bioinformatics. Students investigate the human body systems and various health conditions including heart disease, diabetes, hypercholesterolemia, and infectious diseases. A theme through the course is to determine the factors that led to the death of a fictional person. After determining the factors responsible for the death, the students investigate lifestyle choices and medical treatments that might have prolonged the person’s life. Key biological concepts included in the curriculum are: homeostasis, metabolism, inheritance of traits, feedback systems, and defense against disease. Engineering principles such as the design process, feedback loops, fluid dynamics, and the relationship of structure to function will be included where appropriate. The course is designed to provide an overview of all courses in the Biomedical Sciences program and to lay the scientific foundation necessary for student success in the subsequent courses. NOTE: This course aligns with the PLTW Principles of Biomedical Sciences curriculum. Use of the PLTW Curriculum may require additional training and membership in the PLTW network.

- Grade(s): 9, 10
- Campus: MCIT
- Required Prerequisites: Biology I or concurrent enrollment in Biology I is required
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills a science requirement for all diplomas
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: +0.5

5276 Anatomy and Physiology

Anatomy & Physiology is a course in which students investigate concepts related to Health Science, with emphasis on interdependence of systems and contributions of each system to the maintenance of a healthy body. It introduces students to the cell, which is the basic structural and functional unit of all organisms, and covers tissues, integument, skeletal, muscular and nervous systems as an integrated unit. Through instruction, including laboratory activities, students apply concepts associated with Human

Anatomy & Physiology. Students will understand the structure, organization and function of the various components of the healthy body in order to apply this knowledge in all health related fields.

- Grade(s): 10, 11
- Campus: MCIT
- Required Prerequisites: 5218 Principles of Biomedical Sciences
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit, Science and Lab Science credit for diploma and readiness seals
- NLPS Alignment: Concentrator A Course
- Dual Credit Alignment: IVYT - APHY 101 - Anatomy and Physiology I (3) / IVYT - APHY 102 - Anatomy and Physiology II (3)
- Industry Certification: None
- Weight: +1.0

5217 Medical Interventions

Medical Interventions is a course that studies medical practices including interventions to support humans in treating disease and maintaining health. Using a project-based learning approach, students will investigate various medical interventions that extend and improve quality of life, including gene therapy, pharmacology, surgery, prosthetics, rehabilitation, and supportive care. Students will also study the design and development of various interventions. Lessons will cover the history of organ transplants and gene therapy with additional readings from current scientific literature addressing cutting edge developments. NOTE: This course aligns with the PLTW Medical Interventions curriculum. Use of the PLTW Curriculum may require additional training and membership in the PLTW network.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: 5218 Principles of Biomedical Sciences; 5216 Human Body Systems
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit, Science and Lab Science credit for diploma and readiness seals
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: +1.0

5219 Biomedical Innovations

Biomedical Innovation is a capstone course designed to give students the opportunity to design innovative solutions for the health challenges of the 21st Century as they work through progressively challenging open-ended problems, addressing topics such as clinical medicine, physiology, biomedical engineering, and public health. Students have the opportunity to work on an independent project and may work with a mentor or advisor from a healthcare or postsecondary industry. Throughout the course, students are expected to present their work to an adult audience that may include representatives from the local business and healthcare community. NOTE: This course aligns with the PLTW Biomedical Innovations curriculum. Use of the PLTW Curriculum may require additional training and membership in the PLTW network.

- Grade(s): 12

- Campus: MCIT
- Required Prerequisites: 5218 Principles of Biomedical Sciences; 5216 Human Body Systems or 5276 Anatomy and Physiology; 5217 Medical Interventions
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit, Science and Lab Science credit for diploma and readiness seals
- NLPS Alignment: Capstone Course
- Dual Credit Alignment: None
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Biotechnology

Principles of Biotechnology (7340)	Biotech Manufacturing (7341)	Biotech Regulatory Affairs (7342)	Biotechnology Capstone (5219)
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7340 Principles of Biotechnology

Principles of Biotechnology presents an in-depth overview of biotechnology emphasizing basic molecular techniques of manipulating DNA; processes involved in protein purification and analysis; microbial, plant, aquatic, medical and animal biotechnology; regulations and ethics of the biotechnology industry.

- Grade(s): 9, 10
- Required Prerequisites: None
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - BIOT 100 - Survey of Biotechnology (3)
- Industry Certification: None
- Weight: +1.0

7341 Biotech Manufacturing

Biotech Manufacturing introduces students to the basics of design and manufacturing within the biotechnology industry, gaining an understanding of the work environment. Students will learn a brief history of the Food and Drug Administration, then will learn how the practices set forth by the FDA control the work environment and the behavior of workers in the field. This course prepares students for the most basic entry level position in this regulated industry.

- Grade(s): 10, 11
- Required Prerequisites: Principles of Biotechnology
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator A

- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - BIOT 102 - Survey of Good Manufacturing Practices (3)
- Industry Certification: None
- Weight: +1.0

7342 Biotech Regulatory Affairs

Biotech Regulatory Affairs provides an entry level introduction to the laws and regulations that govern the development, marketing and commercial distribution of drugs, biological and medical device products and how they relate to the pharmaceutical, biotechnology and medical device industry. This course is intended to provide individuals with a greater understanding of regulatory affairs, specifically providing an understanding of how their actions are controlled by regulations and how to interact with FDA or global regulatory agencies.

- Grade(s): 11, 12
- Required Prerequisites: Principles of Biotechnology, Biotech Manufacturing
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or elective for all diplomas
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator B
- Dual Credit Alignment: IVYT - BIOT 105 - Survey of Regulatory Affairs (3) (Pending)
- Industry Certification: None
- Weight: +1.0

Certified Clinical Medical Assistant (CCMA) Pathway

[DOUBLE BLOCK - SPLIT] Principles of Healthcare (7168) + Healthcare Fundamentals (5274)

[DOUBLE BLOCK - EXTENDED] Certified Clinical Medical Assistant - CCMA (7164) + Healthcare Capstone (7255)

7168 Principles of Healthcare

Principles of Healthcare content includes skills common to specific health career topics such as patient nursing care, dental care, animal care, medical laboratory, public health, and an introduction to healthcare systems. Lab experiences are organized and planned around the activities associated with the student's career objectives.

- Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – 7168 Principles of Healthcare, 2nd Block – 5274 Healthcare Fundamentals opposite day
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: IVYT - HLHS 100 - Introduction to Health Careers (3)
- Industry Certification: None

- Weight: +1.0

5274 Healthcare Fundamentals

Healthcare Fundamentals prepares students with language skills necessary for effective, independent use of health and medical reference materials. It includes the study of health and medical abbreviations, symbols, and Greek and Latin word part meanings, all taught within the context of body systems. This course builds skills in pronouncing, spelling, and defining new words encountered in verbal and written information in the healthcare industry. Additionally, the course introduces cells, tissues, and human anatomy highlighting essential physiological principles through a systemic approach. Students have the opportunity to acquire essential skills for accurate and logical communication, and interpretation of medical records.

- Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – 7168 Principles of Healthcare, 2nd Block – 5274 Healthcare Fundamentals opposite day
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, maximum of 2 credits
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator A Course
- Dual Credit Alignment: IVYT - HLHS 101 - Medical Terminology (3)
- Industry Certification: None
- Weight: +1.0

7164 Certified Clinical Medical Assistant

The Certified Clinical Medical Assistant course will prepare students for the National Healthcare Association CCMA exam. Instruction includes taking and recording vital signs, preparing patients for examination, patient education, and assisting the physician during the exam. The collecting and preparation of laboratory specimens and basic laboratory tests will be covered. Prepares for the administration of medication, venipuncture, ECG, and wound care. Provides a basic understanding of the clinical and administrative duties and responsibilities pertinent to medical offices. Includes instruction in medical correspondence and records, case histories of patients, filing, telephone procedures, appointment scheduling, receptionist duties, and processing mail. Written, verbal and nonverbal communications according to patient needs are covered as well as documentation and associated legal and ethical boundaries.

- Grade(s): 12
- Campus: MCIT
- 2 Block Course: 1st Block – 7164 Certified Medical Assistant, 2nd Block – 7255M Healthcare Specialist Capstone
- Required Prerequisites: 7168 Principles of Healthcare; 5274 Healthcare Fundamentals
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: None
- Industry Certification: CCMA: NHA Certified Clinical Medical Assistant National Healthcare Association Certification

- Weight: +1.0

7255M Healthcare Specialist Capstone

The capstone course will provide healthcare students with additional knowledge and skills necessary to work in a variety of health care settings beyond a long term care facility, including hospitals, doctors' offices and clinics. Students can accomplish this goal by completing coursework that will cover topics such as Medical Law and Ethics, Electronic Health Records, and/or Behavioral Health. Schools may offer additional healthcare certifications.

- Grade(s): 12
- Campus: MCIT
- 2 Block Course: 1st Block – 7164 Certified Medical Assistant, 2nd Block – 7255M Healthcare Specialist Capstone
- Required Prerequisites: 7168 Principles of Healthcare; 5274 Healthcare Fundamentals
- Credits: 2 semester course, 2 semester required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone Course
- Dual Credit Alignment: None
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Pre-Nursing/Certified Nursing Aide (CNA) Pathway

[DOUBLE BLOCK - SPLIT] Principles of Healthcare (7168) + Healthcare Fundamentals (5274)

[TRIPLE BLOCK] Healthcare Specialist - CNA (7166) + Healthcare Capstone (7255)

7168 Principles of Healthcare

Principles of Healthcare content includes skills common to specific health career topics such as patient nursing care, dental care, animal care, medical laboratory, public health, and an introduction to healthcare systems. Lab experiences are organized and planned around the activities associated with the student's career objectives.

- Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – 7168 Principles of Healthcare, 2nd Block – 5274 Healthcare Fundamentals opposite day
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - HLHS 100 - Introduction to Health Careers (3)
- Industry Certification: None

- Weight: +1.0

5274 Healthcare Fundamentals

Healthcare Fundamentals prepares students with language skills necessary for effective, independent use of health and medical reference materials. It includes the study of health and medical abbreviations, symbols, and Greek and Latin word part meanings, all taught within the context of body systems. This course builds skills in pronouncing, spelling, and defining new words encountered in verbal and written information in the healthcare industry. Additionally, the course introduces cells, tissues, and human anatomy highlighting essential physiological principles through a systemic approach. Students have the opportunity to acquire essential skills for accurate and logical communication, and interpretation of medical records.

- Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – 7168 Principles of Healthcare, 2nd Block – 5274 Healthcare Fundamentals opposite day
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, maximum of 2 credits
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator A Course
- Dual Credit Alignment: IVYT - HLHS 101 - Medical Terminology (3)
- Industry Certification: None
- Weight: +1.0

7166 Healthcare Specialist - CNA

The Healthcare Specialist: CNA prepares individuals desiring to work as nursing assistants with the knowledge, skills and attitudes essential for providing basic care in extended care facilities, hospitals and home health agencies under the direction of licensed nurses. The course will introduce students to the disease process and aspects of caring for a long-term care resident with dementia. Individuals who successfully complete this course are eligible to apply to sit for the Indiana State Department of Health (ISDH) certification exam for nursing assistants. This course meets the minimum standards set forth by the ISDH for Certified Nursing Assistant training and for health care workers in long-term care facilities.

- Grade(s): 12
- Campus: MCIT
- 3 Block Fall Course schedule: 1st Block – 7166 Healthcare Specialist CNA, 2nd Block – 7166 Healthcare Specialist CNA, 3rd Block – 7255N Healthcare Specialist Capstone
- Required Prerequisites: 7168 Principles of Healthcare; 5274 Healthcare Fundamentals
- Credits: 1 semester course, 1 semester required, 2 credits in Fall Semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - HLHS 107 - CNA Preparation (5)
- Industry Certification: CNA Prep: ISDH CNA Certification
- Weight: +1.0

7255N Healthcare Specialist Capstone

The capstone course will provide Healthcare students with additional knowledge and skills necessary to work in a variety of health care settings beyond a long term care facility, including hospitals, doctor's offices and clinics. Students can accomplish this goal by completing coursework that will cover topics such as Medical Law and Ethics, Electronic Health Records, and/or Behavioral Health. Schools may offer additional healthcare certifications.

- Grade(s): 12
- Campus: MCIT
- 3 Block Fall Course schedule: 1st Block – 7166 Healthcare Specialist CNA, 2nd Block – 7166 Healthcare Specialist CNA, 3rd Block – 7255N Healthcare Specialist Capstone
- 3 Block Spring Course schedule: 1st Block – 5974W Workbased Learning, 2nd Block – 5974W Workbased Learning, 3rd Block – 7255N Healthcare Specialist Capstone
- Required Prerequisites: 7168 Principles of Healthcare; 5274 Healthcare Fundamentals
- Credits: 2 semester course, 2 semester required; 1 credit per semester, maximum of 2 credits
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone Course
- Dual Credit Alignment: None
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

5974 Work Based Learning Senior Capstone

Work-based Learning Capstone is an instructional strategy that can be implemented as a standalone course or a component of any CTE course that prepares students for college and career. This strategy builds individual students' skills and knowledge within the area of interest. A standards based training plan is developed by the student, teacher, and workplace mentor to guide the student's work based learning experiences and assist in evaluating progress and performance, whether WBL is a standalone course or a component of a discipline-specific CTE course. **The student must provide his/her own transportation to and from job situations and be willing to work a minimum of fifteen hours per week.**

- Grade(s): 12
- Credits: 1 Semester course; 2 credit Spring Semester; maximum of 2 credits
- 3 Block Spring Course schedule: 1st Block – 5974W Workbased Learning, 2nd Block – 5974W Workbased Learning, 3rd Block – 7255N Healthcare Specialist Capstone
- Counts as a directed elective or elective for all diplomas

Hospitality, Events, & Tourism

Culinary Arts Pathway

Principles of Culinary Arts & Hospitality (7173)	[DOUBLE BLOCK] Nutrition (7171) + Culinary Arts (7169)	[TRIPLE BLOCK] Culinary Arts Capstone (7233)
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7173 Principles of Culinary and Hospitality

Principles of Culinary and Hospitality is designed to develop an understanding of the hospitality industry and career opportunities, and responsibilities in the food service and lodging industry. Introduces procedures for decision making which affects operation management, products, labor, and revenue. Additionally, students will learn the fundamentals of food preparation, basic principles of sanitation, service procedures, and safety practices in the food service industry including proper operation techniques for equipment.

- Grade(s): 10, 11
- Campus: LC, LN
- Required Prerequisites: None
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7171 Nutrition (Culinary)

Nutrition students will learn the characteristics, functions and food sources of the major nutrient groups and how to maximize nutrient retention in food preparation and storage. Students will be made aware of nutrient needs throughout the life cycle and to apply those principles to menu planning and food preparation. This course will engage students in hands-on learning of nutritional concepts such as preparing nutrient dense meals or examining nutritional needs of student athletes.

- Grade(s): 11, 12
- Campus: MCIT
- 2 Block Course: 1st Block - 7171 Nutrition , 2nd Block – 7169 Culinary Arts
- Required Prerequisites: Principles of Culinary and Hospitality
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator A Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7169 Culinary Arts

Culinary Arts teaches students how to prepare the four major stocks, the five mother sauces (in addition to smaller sauces) and various soups. Additional emphasis is placed on the further development of the classical cooking methods. This course will also present the fundamentals of baking science including terminology, ingredients, weights and measures, and proper use and care of equipment. Students will produce yeast goods, pies, cakes, cookies, and quick breads.

- Grade(s): 11, 12
- Campus: MCIT
- 2 Block Course: 1st Block - 7171 Nutrition , 2nd Block – 7169 Culinary Arts
- Required Prerequisites: Principles of Culinary and Hospitality; Nutrition
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - REST 120 - Food Service Sanitation (5)
- Industry Certification: ProSTART plus ServSafe Food Handler
- Weight: +1.0

7233 Culinary Arts Capstone (Bernie's Place)

Bernie's Place is a student-operated restaurant housed at MCIT. Students in the Culinary Arts Capstone learn both front of house and back of house operations and skills. This includes proper sanitation measures, food preparation skills, bookkeeping, and service. Through a lab-intensive approach, students gain valuable experience by managing and operating Bernie's Place, MCIT's on-site restaurant. They apply lessons learned during their pathway to serve patrons from both the school community and the public. Additionally, Bernie's Place provides students with experience in catering for events, both on-site and through delivery, enhancing their real-world skills in culinary arts and hospitality management.

- Grade(s): 12
- Campus: MCIT
- 3 Block Course
- Required Prerequisites: Principles of Culinary and Hospitality; Nutrition (Culinary) taken at MCIT; Culinary Arts taken at MCIT
- Credits: 2 semester course, 2 semester required, 3 credits per semester, 6 credits max
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - CULN 110 - Quantity Food Production (5)
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Health & Human Services

Barbering Pathway

Principles of Barbering & Cosmetology (7330)	[TRIPLE BLOCK] Barbering Fundamentals (7331) + Advanced Barbering (7333) + Technical Skill Development (7156)	[QUAD BLOCK] Barbering Capstone (7334)
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7330 Principles of Barbering and Cosmetology

Principles of Cosmetology offers an introduction to cosmetology with emphasis on basic practical skills and theories including roller control, quick styling, shampooing, hair coloring, permanent waving, facials, manicuring, business and personal ethics, and bacteriology and sanitation. Successful completion of the course requires at least 375 Cosmetology studio hours. ***Entry into the Barbering/Cosmetology program is extremely competitive due to the limited number of seats. Students' records such as attendance, discipline history, and grades will be used to allocate seats.***

- Grade(s): 10
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7331B Barbering Fundamentals

Barbering and Cosmetology Fundamentals focuses on the development of practical skills introduced in Principles of Barbering and Cosmetology. Clinical application and theory in the science of barbering and cosmetology are introduced.

- Grade(s): 11
- Campus: MCIT
- 2+1 Block Course: 1st Block – 7331 Barbering Fundamentals, 2nd Block – 7333 Advanced Barbering, 3rd Block – 7156 Technical Skills Development (on opposite day)
- Required Prerequisites: 7330 Principles of Barbering and Cosmetology
- Credits: Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- *This course requires extended hours of participation in order to meet the 1500 hours required for the Cosmetology and Barbering exams.*
- NLPS Alignment: Concentrator A Course
- Dual Credit Alignment: None

- Industry Certification: None
- Weight: None

7333 Advanced Barbering

Advanced Barbering is a course with a focus particularly on barbering styles and techniques. The emphasis will be toward the development of advanced skills in styling, hair coloring, permanent waving, facials and facial hair care. Students will also study anatomy and physiology as it applies to cosmetology. Upon completion of the course requirements, the students will be able to perform basic manipulative skills including haircutting, hairstyling, perming, and shaving, treatment of the skin and scalp, salon management, license laws, sanitation and retain knowledge relating to the history of barbering.

- Grade(s): 11
- Campus: MCIT
- 2+1 Block Course: 1st Block – 7331 Barbering Fundamentals, 2nd Block – 7333 Advanced Barbering, 3rd Block – 7156 Technical Skills Development (on opposite day)
- Required Prerequisites: 7330 Principles of Barbering and Cosmetology
- Credits: Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or Elective for all diplomas
- *This course requires extended hours of participation in order to meet the 1500 hours required for the Cosmetology and Barbering exams.*
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7156B Technical Skills Development

The Technical Skills Development course may be used to provide students with the opportunity to apply the technical knowledge and skills learned in a Concentrator A or B course through additional real world learning experiences such as lab activities, project based learning or a work-based learning experience. Students must be co-enrolled in a Concentrator A and/or B course in order to be enrolled in the Technical Skills Development course.

- Grade(s): 11
- Campus: MCIT
- 2+1 Block Course: 1st Block – 7331 Barbering Fundamentals, 2nd Block – 7333 Advanced Barbering, 3rd Block – 7156 Technical Skills Development (on opposite day)
- Required Prerequisites: Concurrently enrolled in a Next Level Programs of Study Concentrator A and/or B course.
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum per program of study
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: None
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7334B Barbering Capstone

Barbering Capstone builds and improves previously developed skills with emphasis on developing individual techniques. Professionalism, shop management, psychology in relation to barbering and cosmetology, and preparation for state board examination are stressed. Successful students in the Barbering Capstone complete the Barbicide Certification and the Indiana State Barbering/Cosmetology License requirements.

- Grade(s): 12
- Campus: MCIT
- 4 Block Course: 1st Block – 7334B Barbering Capstone, 2nd Block – 7334B Barbering Capstone, 3rd Block - 7334B Barbering Capstone, 4th Block - 5974 Workbased Learning Senior Capstone
- Required Prerequisites: 7330 Principles of Barbering and Cosmetology; 7331 Barbering and Cosmetology Fundamentals; 7333 Advanced Barbering
- Credits: 2 semester course, 2 semesters required, 3 credits per semester, 6 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- This course requires extended hours of participation in order to meet the 1500 hours required for the Cosmetology and Barbering exams.
- NLPS Alignment: Capstone Course
- Dual Credit Alignment: None
- Industry Certification: Barbicide Certification and Indiana State Barber/Cosmetology License
- Work-based Learning Experience
- Weight: +1.0

5974 Work Based Learning Senior Capstone

Work-based Learning Capstone is an instructional strategy that can be implemented as a standalone course or a component of any CTE course that prepares students for college and career. This strategy builds individual students' skills and knowledge within the area of interest. A standards based training plan is developed by the student, teacher, and workplace mentor to guide the student's work based learning experiences and assist in evaluating progress and performance, whether WBL is a standalone course or a component of a discipline-specific CTE course.

- Grade(s): 12
- Campus: MCIT
- Credits: 2 Semester course; 1 credit per semester; maximum of 2 credits
- 4 Block Course: 1st Block – 7334B Barbering Capstone, 2nd Block – 7334B Barbering Capstone, 3rd Block - 7334B Barbering Capstone, 4th Block - 5974 Workbased Learning Senior Capstone
- Counts as a directed elective or elective for all diplomas

Cosmetology Pathway

Principles of Barbering & Cosmetology (7330)	[TRIPLE BLOCK] Cosmetology Fundamentals (7331) + Advanced Cosmetology (7332) + Technical Skill Development (7156)	[QUAD BLOCK] Cosmetology Capstone (7334)
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7330 Principles of Barbering and Cosmetology

Principles of Cosmetology offers an introduction to cosmetology with emphasis on basic practical skills and theories including roller control, quick styling, shampooing, hair coloring, permanent waving, facials, manicuring, business and personal ethics, and bacteriology and sanitation. Successful completion of the course requires at least 375 Cosmetology studio hours. ***Entry into the Barbering/Cosmetology program is extremely competitive due to the limited number of seats. Students' records such as attendance, discipline history, and grades will be used to allocate seats.***

- Grade(s): 10
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or Elective for all diplomas
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7331C Cosmetology Fundamentals

Barbering and Cosmetology Fundamentals focuses on the development of practical skills introduced in Principles of Barbering and Cosmetology. Clinical application and theory in the science of barbering and cosmetology are introduced.

- Grade(s): 11
- Campus: MCIT
- 2+1 Block Course: 1st Block – 7331 Barbering & Cosmetology Fundamentals, 2nd Block – 7332 Advanced Cosmetology, 3rd Block – 7156 Technical Skills Development (on opposite day)
- Required Prerequisites: 7330 Principles of Barbering and Cosmetology
- Credits: Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- *This course requires extended hours of participation in order to meet the 1500 hours required for the Cosmetology and Barbering exams.*
- NLPS Alignment: Concentrator A Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: +1.0

7332 Advanced Cosmetology

Advanced Barbering is a course with a focus particularly on barbering styles and techniques. The emphasis will be toward the development of advanced skills in styling, hair coloring, permanent waving, facials and facial hair care. Students will also study anatomy and physiology as it applies to cosmetology. Upon completion of the course requirements, the students will be able to perform basic manipulative skills including haircutting, hairstyling, perming, and shaving, treatment of the skin and scalp, salon management, license laws, sanitation and retain knowledge relating to the history of barbering.

- Grade(s): 11

- Campus: MCIT
- 2+1 Block Course: 1st Block – 7331 Cosmetology Fundamentals, 2nd Block – 7332 Advanced Cosmetology, 3rd Block – 7156 Technical Skills Development (on opposite day)
- Required Prerequisites: 7330 Principles of Barbering and Cosmetology
- Credits: Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- *This course requires extended hours of participation in order to meet the 1500 hours required for the Cosmetology and Barbering exams.*
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - COSM 100 - Cosmetology I (7) / VU - COSM 150 - Cosmetology II (7)
- Industry Certification: None
- Weight: +1.0

7156C Technical Skills Development

The Technical Skills Development course may be used to provide students with the opportunity to apply the technical knowledge and skills learned in a Concentrator A or B course through additional real world learning experiences such as lab activities, project based learning or a work-based learning experience. Students must be co-enrolled in a Concentrator A and/or B course in order to be enrolled in the Technical Skills Development course.

- Grade(s): 11
- 3 Block Course: 1st Block – 7331 Cosmetology Fundamentals, 2nd Block – 7332 Advanced Cosmetology, 3rd Block – 7156 Technical Skills Development (on opposite day)
- Required Prerequisites: Concurrently enrolled in a Next Level Programs of Study Concentrator A and/or B course.
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum per program of study
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: None
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7334C Cosmetology Capstone

Cosmetology Capstone builds and improves previously developed skills with emphasis on developing individual techniques. Professionalism, shop management, psychology in relation to barbering and cosmetology, and preparation for state board examination are stressed. Successful students in the Cosmetology Capstone complete the Indiana State Barbering/Cosmetology License requirements.

- Grade(s): 12
- Campus: MCIT
- 4 Block Course: 1st Block – 7334C Cosmetology Capstone, 2nd Block – 7334C Cosmetology Capstone, 3rd Block - 7334C Cosmetology Capstone (opposite day), 4th Block - 5974 Workbased Learning Senior Capstone (opposite day)

- Required Prerequisites: 7330 Principles of Barbering and Cosmetology; 7331 Cosmetology Fundamentals; 7332 Advanced Cosmetology
- Credits: 2 semester course, 2 semesters required, 3 credits per semester, 6 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- This course requires extended hours of participation in order to meet the 1500 hours required for the Cosmetology and Barbering exams.
- NLPS Alignment: Capstone Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - COSM 200 - Cosmetology III (7) / VU - COSM 250 - Cosmetology IV (7)
- Industry Certification: Indiana State Barber/Cosmetology License
- Work-based Learning Experience
- Weight: +1.0

5974 Work Based Learning Senior Capstone

Work-based Learning Capstone is an instructional strategy that can be implemented as a standalone course or a component of any CTE course that prepares students for college and career. This strategy builds individual students' skills and knowledge within the area of interest. A standards based training plan is developed by the student, teacher, and workplace mentor to guide the student's work based learning experiences and assist in evaluating progress and performance, whether WBL is a standalone course or a component of a discipline-specific CTE course.

- Grade(s): 12
- Campus: MCIT
- Credits: 2 Semester course; 1 credit per semester; maximum of 2 credits
- 4 Block Course: 1st Block – 7334C Cosmetology Capstone, 2nd Block – 7334C Cosmetology Capstone, 3rd Block - 7334C Cosmetology Capstone (opposite day), 4th Block - 5974 Workbased Learning Senior Capstone (opposite day)
- Counts as a directed elective or elective for all diplomas

Public Service & Safety

Criminal Justice Pathway

Principles of Criminal Justice (7193)	[DOUBLE BLOCK-EXTENDED] Law Enforcement Fundamentals (7191) + Corrections & Cultural Awareness (7188)	Criminal Justice Capstone (7231)
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7193 Principles of Criminal Justice

Principles of Criminal Justice covers the purposes, functions, and history of the three primary parts of the criminal justice system: law enforcement, courts, and corrections. This course further explores the interrelationships and responsibilities of these three primary elements of the criminal justice system.

- Grade(s): 10, 11
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7191 Law Enforcement Fundamentals

Law Enforcement Fundamentals Critically examines the history and nature of the major theoretical perspectives in criminology, and the theories found within those perspectives. Analyzes the research support for such theories and perspectives, and the connections between theory and criminal justice system practice within all the major components of the criminal justice system. Demonstrates the application of specific theories to explain violent and non-violent criminal behavior on both the micro and macro levels of analysis. Additionally, this course will introduce fundamental law enforcement operations and organization. This includes the evolution of law enforcement at federal, state, and local levels.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Criminal Justice
- 2 Block Course: 1st Block - 7191 Law Enforcement Fundamentals, 2nd Block – Corrections & Cultural Awareness
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator A
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - CRIM 130 - Introduction to Corrections (3)
- Industry Certification: None

- Weight: +1.0

7188 Corrections and Cultural Awareness

Corrections and Cultural Awareness emphasizes the study of American criminal justice problems and systems in historical and cultural perspectives, as well as discussing social and public policy factors affecting crime. Multidisciplinary and multicultural perspectives are stressed. Additionally, this course takes a further examination of the American correctional system; the study of administration of local, state, and federal correctional agencies. The examination also includes the history and development of correctional policies and practices, criminal sentencing, jails, prisons, alternative sentencing, prisoner rights, rehabilitation, and community corrections including probation and parole. Current philosophies of corrections and the debates surrounding the roles and effectiveness of criminal sentences, institutional procedures, technological developments, and special populations are discussed.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Criminal Justice; Law Enforcement Fundamentals
- 2 Block Course: 1st Block - 7191 Law Enforcement Fundamentals, 2nd Block – Corrections & Cultural Awareness
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - CRIM 110 - Introduction to Law Enforcement (3)
- Industry Certification: None
- Weight: +1.0

7231 Criminal Justice Capstone

The Criminal Justice Capstone course allows students to complete additional instruction to earn a postsecondary certificate and should include a work-based learning component such as job shadowing, internship, etc. once the core content is completed. Note that there may be age restrictions on work-based learning components.

- Grade(s): 12
- Campus: MCIT
- Required Prerequisites: Principles of Criminal Justice; Law Enforcement Fundamentals, Corrections and Cultural Awareness
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone
- Dual Credit Alignment: None
- Industry Certification: 911 Dispatcher Certification
- Work-based Learning Experience
- Weight: +1.0

Information and Communications Technology

Cybersecurity Pathway

Principles of Computing (7183)	[DOUBLE BLOCK] Cybersecurity Fundamentals (7179)	Advanced Cybersecurity (7178)	[DOUBLE BLOCK] Cybersecurity Capstone (7243)
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7183 Principles of Computing

Principles of Computing provides students the opportunity to explore how computers can be used in a wide variety of settings. The course will begin by exploring trends of computing and the necessary skills to implement information systems. Topics include operating systems, database technology, cybersecurity, cloud implementations and other concepts associated with applying the principles of good information management to the organization. Students will also have the opportunity to utilize basic programming skills to develop scripts designed to solve problems. Students will learn about algorithms, logic development and flowcharting.

- Grade(s): 9, 10o
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: CompTIA IT Fundamentals (ITF)
- Weight: +1.0

7179 Cybersecurity Fundamentals

This course introduces fundamental networking protocols and their hierarchical relationship in the context of conceptual Information Communication Technology (ICT) frameworks. Students will learn how networked hosts and applications communicate across networks. Emphasis is placed on security throughout the entire SDLC (Systems Development Life Cycle).

- Grade(s): 10, 11
- Campus: MCIT
- Double-Block Course
- Required Prerequisites: 7183 Principles of Computing
- Credits: 2 semester course, 2 semesters required, 2 credits per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills Computer Science credit for diploma and readiness seals due to pairing with Principles of Computing taken
- NLPS Alignment: Concentrator A Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - CMET 140 - CompTIA A+ (3) / VU - CMET 185 - CompTIA A+

Certification Prep (2) / VU - CMET 195 - CompTIA A+ Certification (1)

- Industry Certification: CompTIA A+, CompTIA Net+
- Weight: +1.0

7178 Advanced Cybersecurity

Students will acquire the fundamentals of information and data security and understand the vulnerability most organizations have in their security systems with an emphasis on firewalls, security plans and Virtual Private Networks (VPNs). Discussions will include data security methods, authentication, network attacks, malicious code and viruses, wireless security, e-mail and web security and disaster recovery. This course will also focus on the managerial aspects of information security and assurance. Topics covered include access control models, information security governance, and information security program assessment and metrics. Coverage on the foundational and technical components of information security is included to reinforce key concepts, such as security planning and contingencies, security policies, security management models and practices and ethics.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: 7183 Principles of Computing; 7179 Cybersecurity Fundamentals
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills Computer Science credit for diploma and readiness seals due to pairing with Principles of Computing taken
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - CMET 220 - CompTIA Network+ Certification (1) / VU - CNET 215 - CompTIA Network+ (2)
- Industry Certification: CompTIA Net+
- Weight: +1.0

7243 Cybersecurity Capstone

The Cybersecurity Capstone is designed to increase a student's ability to investigate advanced topics with a primary focus on computer forensics, cyber law, cybercrimes, and cyber forensics. Using Federal, State, and existing case laws, students will gain in-depth experience investigating and gathering evidence to prepare for a presentation in a court of law. This course will emphasize the need for structured investigation techniques and proper protocol for maintaining a chain of evidence. Students will learn to follow proper investigative procedures while using a variety of forensic software tools and techniques.

- Grade(s): 12
- 2 Block Course
- Required Prerequisites: 7183 Principles of Computing; 7179 Cybersecurity Fundamentals, 7178 Advanced Cybersecurity
- Credits: 2 semester course, 2 semesters required, 2 credit per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Capstone Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University

- Dual Credit Alignment: VU - CNET 146 - Introduction to Network Operations and Security (3) / VU - CNET 151 - Information and Data Security I (2) / VU - CNET 246 - Fundamentals in Network Operations and Security (3) / VU - CNET 251 - Information and Data Security II (3)
- Industry Certification: CompTIA Sec+ / CompTIA Linux+
- Work-based Learning Experience
- Weight: +1.0

IT Operations Pathway * PHASING OUT - 2026 - 2027 will be last*****

Principles of Computing (7183)	[DOUBLE BLOCK] IT Fundamentals (7180)	Networking & Cybersecurity Operations (7178)	[DOUBLE BLOCK] IT Operations Capstone (7243)
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7183 Principles of Computing

Principles of Computing provides students the opportunity to explore how computers can be used in a wide variety of settings. The course will begin by exploring trends of computing and the necessary skills to implement information systems. Topics include operating systems, database technology, cybersecurity, cloud implementations and other concepts associated with applying the principles of good information management to the organization. Students will also have the opportunity to utilize basic programming skills to develop scripts designed to solve problems. Students will learn about algorithms, logic development and flowcharting.

- Grade(s): 9, 10
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: CompTIA IT Fundamentals (ITF)
- Weight: +1.0

7180 Information Technology Fundamentals

Information Technology Fundamentals provides the necessary competencies required for an entry-level Information Technology professional. Students will have the knowledge required to assemble components based on customer requirements, install, configure and maintain devices/software for end users, understand the basics of networking and security, properly and safely diagnose, resolve and document common hardware and software issues while applying troubleshooting skills. Students will also learn appropriate customer support, understand the basics of virtualization, desktop imaging, and deployment. This course should also prepare students for the CompTia A+ Certification Exam.

- Grade(s): 10, 11
- Campus: MCIT
- Double-Block Course

- Required Prerequisites: 7183 Principles of Computing
- Credits: 2 semester course, 2 semesters required, 2 credits per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills Computer Science credit for diploma and readiness seals due to pairing with Principles of Computing taken
- NLPS Alignment: Concentrator A Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - CMET 140 - CompTIA A+ (3) / VU - CMET 185 - CompTIA A+ Certification Prep (2) / VU - CMET 195 - CompTIA A+ Certification (1)
- Industry Certification: CompTIA A+, CompTIA Net+
- Weight: +1.0

7181 Networking and Cybersecurity Operations

Advanced Information Technology will provide students with the fundamental concepts in networking and cybersecurity. Students are introduced to the principles and concepts of computer networking, covering the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. Students will be able to troubleshoot routers and switches and resolve common issues. The students will also explore the field of Cyber Security/Information Assurance focusing on the technical and managerial aspects of the discipline. Students will be introduced to the basic terminology, concepts, and best practices of computer/network security and the roles and responsibilities of management/security personnel. The students will learn the technologies used and techniques involved in creating a secure computer networking environment including authentication and the types of attacks against an organization.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: 7183 Principles of Computing; 7180 Information Technology Fundamentals
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills Computer Science credit for diploma and readiness seals due to pairing with Principles of Computing taken
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - CMET 220 - CompTIA Network+ Certification (1) / VU - CNET 215 - CompTIA Network+ (2)
- Industry Certification: CompTIA Net+
- Weight: +1.0

7245 IT Support Capstone

IT Operations Capstone students will acquire the skills and knowledge needed to provide tier 1 technical support services. The student will learn troubleshooting and problem solving in working with end users using various digital tools such as helpdesk software, knowledge bases, ticket management systems, and other tier 1 computer related support services. Students will also learn to implement, administer, and troubleshoot Information systems using the Microsoft Windows clients and servers in an enterprise environment. Students will be introduced to managing applications, files, folders, and devices in a Windows active directory

environment. Additionally students have the chance to understand and apply Linux and Virtualization concepts.

- Grade(s): 12
- Campus: MCIT
- 2 Block Course
- Required Prerequisites: 7183 Principles of Computing; 7180 Information Technology Fundamentals, 7181 Networking and Cybersecurity Operations
- Credits: 2 semester course, 2 semesters required, 2 credit per semester, 4 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone Course
- Dual Credit Alignment: VU - CNET 146 - Introduction to Network Operations and Security (3) / VU - CNET 151 - Information and Data Security I (2) / VU - CNET 246 - Fundamentals in Network Operations and Security (3) / VU - CNET 251 - Information and Data Security II (3)
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Software Development Pathway

Principles of Computing (7183)	Website & Database Development (7185)	Software Development (7184)	Software Development Capstone (7253)
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7183 Principles of Computing

Principles of Computing provides students the opportunity to explore how computers can be used in a wide variety of settings. The course will begin by exploring trends of computing and the necessary skills to implement information systems. Topics include operating systems, database technology, cybersecurity, cloud implementations and other concepts associated with applying the principles of good information management to the organization. Students will also have the opportunity to utilize basic programming skills to develop scripts designed to solve problems. Students will learn about algorithms, logic development and flowcharting.

- Grade(s): 9, 10
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: None
- Industry Certification: CompTIA IT Fundamentals (ITF)
- Weight: +1.0

7185 Website and Database Development

Website and Database Development will provide students a basic understanding of the essential Web and Database skills and business practices that directly relate to Internet technologies used in Web site

and Database design and development. Students will learn to develop Web sites using Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Additionally students will be introduced to the basic concepts of databases including types of databases, general database environments, database design, normalization and development of tables, queries, reports, and applications. Students will be familiarized with the use of ANSI Standard Structured Query Language. Students will be introduced to data concepts such as data warehousing, data mining, and BIG Data. Students will develop a business application using database software such as Microsoft Access.

- Grade(s): 10, 11
- Campus: MCIT
- Required Prerequisites: 7183 Principles of Computing
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- Fulfills Computer Science credit for diploma and readiness seals due to pairing with Principles of Computing taken
- NLPS Alignment: Concentrator A Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - COMP 107 - Web Page Design (3) / VU - COMP 185 - Introduction to Databases (3)
- Industry Certification: None
- Weight: +1.0

7184 Software Development

Software Development introduces students to concepts and practices of programming languages and software development. Students are introduced to algorithms and development tools used to document/implement computer logic. Discusses the history of software development, the different types of programming such as real time processing, web/database applications, and different program development environments. Concepts will be applied using different programming languages, and students will develop and test working programs in an integrated system.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: 7183 Principles of Computing; 7185 Website & Database Development
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- Fulfills Computer Science credit for diploma and readiness seals due to pairing with Principles of Computing taken
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: None

7253 Software Development Capstone

Software Development Capstone provides a basic understanding of the fundamental concepts involved when using an object oriented programming language. The emphasis is on logical

program design using a modular approach involving task-oriented program functions. Object-oriented concepts such as methods, attributes, inheritance, exception handling, and polymorphism are utilized. Applications are developed using these concepts and include developing a graphical user interface, selecting forms and controls, assigning properties and writing code. Students will also build upon their web design experiences in previous courses by taking an in-depth look into client- and server-side scripting aspects including Java Script and PHP: hypertext preprocessor along with other scripting tools

- Grade(s): 12
- Campus: MCIT
- Required Prerequisites: 7183 Principles of Computing; 7185 Website & Database Development, 7184 Software Development
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Capstone Course
- Dual Credit Alignment: None
- Industry Certification: None
- Work-based Learning Experience
- Weight: None

Digital Design Pathway

Principles of Digital Design (7140) *Offered at Home HS	Digital Design Graphics (7141) *Offered at Home HS	Interactive Media Design (7138) *Offered at MCIT	Digital Design Capstone (7246) *Offered at MCIT
OR			
Principles of Digital Design (7140) *Offered at Home HS	Digital Design Graphics (7141) *Offered at Home HS	Graphic Design & Layout (5550) *Offered at MCIT	Digital Design Capstone (7246) *Offered at MCIT

7140 Principles of Digital Design

Principles of Digital Design introduces students to fundamental design theory. Investigations into design theory and color dynamics will provide experiences in applying design theory, ideas and creative problem solving, critical peer evaluation, and presentation skills. Students will have the opportunity to apply the design theory through an understanding of basic photographic theory and technique. Topics will include image capture, processing, various output methods, and light.

- Grade(s): 9, 10
- Campus: LNHS, LCHS
- Required Prerequisites: None
- 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - PHOT 104 - Basic Photography (3) / IVTY - VISC 101 - Design Fundamentals (3)

- Industry Certification: None
- Weight: +1.0

7141 Digital Design Graphics

Digital Design Graphics will help students to understand and create the most common types of computer graphics used in visual communications. Skills are developed through work with professional vector-based and page layout software used in the industry. Additionally, students will be introduced to a full range of image input technology and manipulation including conventional photography, digital imaging, and computer scanners. Students will learn to communicate concepts and ideas through various imaging devices.

- Grade(s): 10, 11
- Campus: LNHS, LCHS
- Required Prerequisites: Principles of Digital Design
- 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator A
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - VISC 102 - Raster Graphics I (3)
- Industry Certification: None
- Weight: +1.0

5550 Graphic Design and Layout

Graphic Design and Layout teaches design process and the proper and creative use of type as a means to develop effective communications for global, corporate and social application. Students will create samples for a portfolio, which may include elements or comprehensive projects in logo, stationery, posters, newspaper, magazine, billboard, and interface design.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Digital Design; Digital Design Graphics
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - VISC 113 - Typography (3) / IVYT - VISC 115 - Vector Graphics & Publish Design I (3)
- Industry Certification: Adobe Certified Professional (ACP) - Illustrator, ACP - InDesign, ACP - Photoshop
- Weight: +1.0

7138 Interactive Media Design

Interactive Media Design focuses on the tools, strategies, and techniques for interactive design and emerging technologies, like web and social media. Students will learn the basics of planning, shooting, editing and post-producing video and sound. Additionally, students will explore the process of

integrating text, graphics, audio and video for effective communication of information.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Digital Design; Digital Design Graphics
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - VISC 105 - Video & Sound (3)
- Industry Certification: Adobe Certified Professional (ACP) - After Effects, ACP - Premiere Pro
- Weight: +1.0

7246 Digital Design Capstone

The Digital Design Capstone course provides students the opportunity to dive deeper into advanced concepts of Visual Communication including user experience/user interface design, video production editing, animation and/or web design. Depending on the length of the course, students may focus their efforts on one area or explore multiple aspects.

- Grade(s): 12
- Campus: MCIT
- 2 Block Course
- Required Prerequisites: Principles of Digital Design; Digital Design Graphics; Graphic Design & Layout or Interactive Media
- Credits: 2 semester course, 2 semester required, 2 credits per semester, 4 credits max
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - VIDT 210 - Production Editing I (3)
- Industry Certification: None
- Work-based Learning Experience
- Weight: TBD

Science, Technology, Engineering, & Math (STEM)

Agricultural Science

Principles of Agriculture (7117)	Horticultural Science (5132)	Greenhouse and Soilless Production (7114)	Horticulture Capstone (7232)
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7117 Principles of Agriculture

Principles of Agriculture is a two-semester course that will cover the diversity of the agricultural industry and agribusiness concepts. Students will develop an understanding of the role of agriculture in the United States and globally. Students will explore Agriculture, Food, and Natural Resource (AFNR) systems related to the production of food, fiber and fuel and the associated health, safety and environmental management systems. Topics covered in the course range from animals, plants, food, natural resources, ag power, structures and technology, and agribusiness. Participation in FFA and Supervised Agricultural Experiences (SAE) will be an integral part of this course in order to develop leadership and career ready skills.

- Grade(s): 9, 10
- Campus: MCIT
- Required Prerequisites: none
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - AGRI 100 - Introduction to Agriculture (3) / IVYT - AGRI 102 - Agricultural Business and Farm Management (3)
- Industry Certification: None
- Weight: +1.0

5132 Horticultural Science

Horticulture Science provides students with a background in the field of horticulture. Coursework includes hands-on activities that encourage students to investigate areas of horticulture as it relates to the biology and technology involved in the production, processing, and marketing of horticultural plants and products. Students are introduced to the following areas of horticulture science: reproduction and propagation of plants, plant growth, growth-media, management practices for field and greenhouse production, marketing concepts, production of plants of local interest, greenhouse management, floral design, and pest management. Students participate in a variety of activities including extensive laboratory work usually in a school greenhouse.

- Grade(s): 10, 11
- Campus: MCIT
- Required Prerequisites: Principles of Agriculture
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals

- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator A
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - AGRI 116 - Survey of Horticulture (3)
- Industry Certification: None
- Weight: +1.0

7114 Greenhouse and Soilless Production

Greenhouse and Soilless Production provides an overview of structural designs and uses of enclosed structures (greenhouses) to grow various plants and food. The course will focus on discussing different types of enclosed structures, management systems, and growing systems used to produce plants and food. The course will also present an overview of soilless growing systems such as hydroponics, aquaponics, aeroponics and fogponics. Students will utilize the school greenhouse as part of this course.

- Grade(s): 11, 12
- Campus: MCIT
- Required Prerequisites: Principles of Agriculture, Horticultural Science
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - AGRI 129 - Alternative Growing Methods (3)
- Industry Certification: None
- Weight: +1.0

7232 Horticulture Capstone

The Horticulture Capstone builds upon the knowledge and skills developed in the Principles, Horticultural Science, and Greenhouse and Soilless Production courses by developing advanced skills that students can apply to the field. As a capstone course, students should have the opportunity to apply their knowledge and use skills through an intensive work-based learning experience.

- Grade(s): 12
- Campus: MCIT
- Required Prerequisites: Principles of Agriculture, Horticultural Science, Greenhouse and Soilless Production
- Credits: 2 semester course, 2 semesters required, 1-3 credits per semester, 6 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Capstone
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - AGRI 130 - *Introduction to Vegetable Production (3)*; IVYT - AGRI 176 - *Urban Food & Agriculture (PENDING)*
- Industry Certification: None
- Work-based Learning Experience
- Weight: +1.0

Automotive Technology: Collision Repair

Principles of Collision Repair (7215)	[DOUBLE BLOCK] Automotive Body Repair (7204) + Plastic Body Repair and Painting Fundamentals (7206)	[TRIPLE BLOCK] Auto Collision Capstone (7380)
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7215 Principles of Collision Repair

Principles of Collision Repair provides students an overview of the operating, electrical, and general maintenance systems of the modern automobile. Students will be introduced to the safety and operation of equipment and tools used in the automotive collision industry. Students will study the basics of collision repair, along with learning to perform basic service and maintenance, including the car's starting and charging system. ***All Automotive Technology students will initially be enrolled in the Principles of Automotive Service (7213) course. Upon student's progression and decision to follow the Collision Repair pathway option, the student's records will be updated to reflect this course.*

- Grade(s): 10
- Campus: MCIT
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: VU - AUTO 105 - Intro to Transportation (2)
- Industry Certification: None
- Weight: +1.0

7204 Automotive Body Repair

Automotive Body Repair provides students with an understanding of the materials, measuring, welding, and information resources applicable to collision repair. Students will study steel and aluminum dent repair, including the welding practices commonly performed within an automotive repair environment. Students will gain basic skills and knowledge in oxy-fuel welding, cutting, brazing and plasma cutting, gas metal arc welding, squeeze type resistance welding, exterior panel welding and I-CAR welding test preparation. Students will also learn the installation of moldings, ornaments, and fasteners with emphasis on sheet metal analysis and safety.

- Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – Automotive Body Repair, 2nd Block – Plastic Body and Painting Fundamentals
- Required Prerequisites: Principles of Collision Repair
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator A Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - WELD 185 - Automotive Body Repair (2)
- Industry Certification: None
- Weight: +1.0

7206 Plastic Body Repair and Painting Fundamentals

Plastic Body Repair and Paint Fundamentals introduces the types of fiberglass and plastic materials used in auto body repair and considerations for automotive painting. Students will explore methods for repairing fiberglass and plastic damage, like welding, reinforcing, repairing holes, and retexturing plastic. Students will be asked to demonstrate the proper use of primers and sealers, spraying techniques, and an understanding of various paint finishes.

- Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – Automotive Body Repair, 2nd Block – Plastic Body and Painting Fundamentals
- Required Prerequisites: Principles of Collision Repair
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - BODY 100 - Non-Structural Analysis (3) / VU - BODY 100L - Non-Structural Analysis Lab (4)
- Industry Certification: None
- Weight: +1.0

7380 Collision Repair Capstone

This course further explores important skills and competencies within the Automotive Body Technology Pathway. Topics such as Automotive Painting Technology, Collision Damage Appraising, and Fiberglass Plastic Repair. Additionally, Co-Op and Internship opportunities will be available for students.

- Grade(s): 12
- Campus: MCIT
- 3 Block Course
- Required Prerequisites: Principles of Collision Repair; Automotive Body Repair; Plastic Body Repair and Paint Fundamental
- Credits: 2 semester course, 2 semester required, 3 credits per semester, 6 credits max
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - BODY 150 - Painting and Refinishing (3) / VU - Body 150L - Painting and Refinishing Lab (4) / VU - BODY 280 - Automotive Customization and Restoration (2) / VU - BODY 290 - Custom Painting and Pinstriping (2)
- Industry Certification: ASE Certification - Collision Repair & Refinish: Painting and Refinishing (B2) Entry level, ASE Certification - Collision Repair & Refinish: Non-Structural Analysis and Damage Repair (B3) Entry Level
- Work-based Learning Experience
- Weight: +1.0

Automotive Technology: Service

Principles of Collision Service (7215)	[DOUBLE BLOCK] Brake Systems (7205) + Steering & Suspensions (7212)	[TRIPLE BLOCK] Auto Service Capstone (7375)
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7213 Principles of Automotive Services

This course gives students an overview of the operating and general maintenance systems of the modern automobile. Students will be introduced to the safety and operation of equipment and tools used in the automotive industry. Students will study the maintenance and light repair of automotive systems. Also, this course gives students an overview of the electrical operating systems of the modern automobile. Students will be introduced to the safety and operation of equipment and tools used in the electrical diagnosis and repair in the automotive electrical industry. Students will study the fundamentals of electricity and automotive electronics. ***All Automotive Technology students will initially be enrolled in this course. Students may decide to opt into the Collision Repair pathway option in their progression of Auto Technology, and their record will be updated to reflect the change to Principles of Collision Repair (7215).*

- Grade(s): 10
- Campus: MCIT
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - AUTO 105 - Intro to Transportation (2)
- Industry Certification: None
- Weight: +1.0

7205 Brake Systems

This course teaches theory, service and repair of automotive braking systems. This course provides an overview of various mechanical brake systems used on today's automobiles. This course will emphasize professional diagnosis and repair methods for brake systems.

- Recommended Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – Brake Systems, 2nd Block – Steering and Suspensions
- Required Prerequisites: Principles of Automotive Services
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator A Course
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - AUTO 120 - Automotive Chassis (5) / VU - AUTO 120L - Chassis Lab (1)
- Industry Certification: ASE Certification - Brakes (A5)
- Weight: +1.0

7212 Steering and Suspensions

This course will study driveline theory and in-car service procedures. Theory and overhaul procedures related to the driveshaft and axle assemblies for front and rear wheel drive vehicles are included as well. Additionally, this course teaches theory, service and repair of automotive steering and suspension systems. It provides an overview of various mechanical, power, and electrical steering and suspension systems used on today's automobiles and will emphasize professional diagnosis and repair methods for steering and suspension systems.

- Grade(s): 11
- Campus: MCIT
- 2 Block Course: 1st Block – Brake Systems, 2nd Block – Steering and Suspensions
- Required Prerequisites: Principles of Automotive Services; Brake Systems
- Credits: Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: None
- Industry Certification: ASE Certification - Suspension & Steering (A4)
- Weight: +1.0

7375 Automotive Service Capstone

This course further explores important skills and competencies within the Automotive Service Technology Pathway. Students will be exposed to an in-depth study of vehicle electrical systems. Students will study the fundamentals of electricity and automotive electronics in various automotive systems. Students will understand other topics such as Engine Repair, Climate Control, and Driveline Service. Additionally, co-op, and internship opportunities will be available for students.

- Grade(s): 12
- 3 Block Course
- Required Prerequisites: Principles of Automotive Services; Brake Systems; Steering and Suspensions
- Credits: 2 semester course, 2 semester required, 3 credits per semester, 6 credits max
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Capstone
- Course Aligned with Postsecondary Courses for Dual Credit through Vincennes University
- Dual Credit Alignment: VU - AUTO 130 - Engines (4) / VU - AUTO 130L - Engines Lab (1) / VU - AUTO 160 - Automotive Electronics (3) / VU - AUTO 160L - Automotive Electronics Lab (1) / VU - AUTO 110 - Transportation Electrical (3) / VU - AUTO 110L - Electrical Lab (1)
- Industry Certification: ASE Certification - Engine Repair (A1), ASE Certification - Electrical & Electronic Systems (A6)
- Work-based Learning Experience
- Weight: +1.0

Construction Trades: Carpentry Pathway

Principles of Construction
Trades (7130)

[DOUBLE BLOCK] Construction Trades: General
Carpentry (7123) + Framing & Finishing (7122)

Construction Trades
Capstone (7242)

7130 Principles of Construction Trades

Principles of Construction Trades prepares students with the basic skills needed to continue in a construction trade field. Topics will include an introduction to the types and uses for common hand and power tools, learn the types and basic terminology associated with construction drawings, and basic safety. Additionally students will study the roles of individuals and companies within the construction industry and reinforce mathematical and communication skills necessary to be successful in the construction field.

- Grade(s): 10, 11 (9th w/Introduction to Construction in Middle School)
- Campus: MCIT
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: IVYT - BCTI 100 - Introduction to Construction Technology (3)
- Industry Certification: NCCER: CORE Certification
- Weight: +1.0

7123 Construction Trades: General Carpentry

General Carpentry builds upon the skills learned in the Principles of Construction Trades and examines the basics of framing. This includes studying the procedures for laying out and constructing floor systems, wall systems, ceiling joist and roof framing, and basic stair layout. Additionally, students will be introduced to building envelope systems.

- Grade(s): 11, 12
- Campus: MCIT
- 2 Block Course: 1st Block – General Carpentry, 2nd Block – Framing and Finishing
- Required Prerequisites: Principles of Construction Trades
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator A
- Dual Credit Alignment: IVYT - BCTI 101 - Introduction to Carpentry Part I (3) / IVYT - BCTI 102 - Introduction to Carpentry Part II (3)
- Industry Certification: None
- Weight: +1.0

7122 Construction Trades: Framing and Finishing

Framing and Finishing prepares students with advanced framing skills along with interior and exterior finishing techniques. Topics include roofing applications, thermal and moisture protection, exterior

finishing, cold-formed steel framing, drywall installation and finishing, doors and door hardware, suspended ceilings, window, door, floor, and ceiling trim, and cabinet installation.

- Grade(s): 11, 12
- Campus: MCIT
- 2 Block Course: 1st Block -- General Carpentry, 2nd Block – Framing and Finishing
- Required Prerequisites: Principles of Construction Trades; Construction Trades: General Carpentry
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Concentrator B
- Dual Credit Alignment: IVYT - BCTI 103 - Carpentry Framing & Finishing Part I (3) / IVYT - BCTI 104 - Carpentry Framing & Finishing Part II (3)
- Industry Certification: NCCER: Carpentry 1 Certification / NCCER: Carpentry 2 Certification
- Weight: +1.0

7242 Construction Trades Capstone

The Construction Trades Capstone course covers the basics of electricity and working with concrete. Electrical topics include the National Electric Code, electrical safety, electrical circuits, basic electrical construction drawings, and residential electrical services. Students may also gain an understanding of concrete properties, foundations, slab-on-grades, and vertical and horizontal formwork.

- Grade(s): 12
- Campus: MCIT
- Required Prerequisites: Principles of Construction Trades; Construction Trades: General Carpentry; and Construction Trades: Framing and Finishing
- 2 Block Course
- Credits: 2 semester course, 2 semesters required, 2 credits per semester, 4 credits maximum
- Counts as a Directed Elective or personalized elective for all diplomas and readiness seals
- Counts as a quantitative reasoning course
- NLPS Alignment: Capstone Course
- Course Aligned with Postsecondary Courses for Dual Credit through Ivy Tech
- Dual Credit Alignment: IVYT - BCTI 201 - Carpentry Forms I (3) / BCTI 280 - Co-Op/Internship (3)
- Industry Certification: None
- Work-Based Learning Experience
- Weight: +1.0

Engineering Pathway

Introduction to Engineering Design (4802)	Principles of Engineering (5644)	***Choose One*** • Digital Electronics (5538) • Civil Eng. & Architecture (5650) • Aerospace Engineering (5518) • Comp Integrated Manufacturing (5334)	Engineering Design & Development (5698)
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4802 Introduction to Engineering Design

Introduction to Engineering Design is a fundamental pre-engineering course where students become familiar with the engineering design process. Students work both individually and in teams to design solutions to a variety of problems using industry standard sketches and current 3D design and modeling software to represent and communicate solutions. Students apply their knowledge through hands-on

projects and document their work with the use of an engineering notebook. Students begin with completing structured activities and move to solving open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills. Ethical issues related to professional practice and product development are also presented.

- Grade(s): 9, 10
- Required Corequisite or Prerequisite: 2520 Algebra 1
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- NLPS Alignment: Principles Course
- Dual Credit Alignment: IVYT - DESN 101 - Introduction to Design Technology (3) / IVYT - DESN 113 - 2D Computer Aided Design (3)
- Industry Certification: None
- Weight: +1.0

5644 Principles of Engineering

Principles of Engineering is a course that focuses on the process of applying engineering, technological, scientific and mathematical principles in the design, production, and operation of products, structures, and systems. This is a hands-on course designed to provide students interested in engineering careers to explore experiences related to specialized fields such as civil, mechanical, and materials engineering. Students will engage in research, development, planning, design, production, and project management to simulate a career in engineering. The topics of ethics and the impacts of engineering decisions are also addressed. Classroom activities are organized to allow students to work in teams and use modern technological processes, computers, CAD software, and production systems in developing and presenting solutions to engineering problems. Schools may use the PLTW curriculum to meet the standards for this course.

- Grade(s): 10, 11
- Required Prerequisites: 4802 Introduction to Engineering Design; 2520 Algebra 1
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Qualifies as a quantitative reasoning course
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator A Course
- Dual Credit Alignment: IVYT - DESN 104 - Mechanical Graphics (3)
- Industry Certification: None
- Weight: +1.0

5538 Digital Electronics

Digital Electronics is a course of study in applied digital logic that encompasses the design and application of electronic circuits and devices found in video games, watches, calculators, digital cameras, and thousands of other devices. Instruction includes the application of engineering and scientific principles as well as the use of Boolean algebra to solve design problems. Using computer software that reflects current industry standards, activities should provide opportunities for students to design, construct, test, and analyze simple and complex digital circuitry software will be used to develop and evaluate the product design. This course engages students in critical thinking and problem-solving skills,

time management and teamwork skills.

- Grade(s): 11, 12
- Required Prerequisites: 4802 Introduction to Engineering Design; 5644 Principles of Engineering
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Qualifies as a quantitative reasoning course
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: IVYT - EECT 112 - Digital Fundamentals (3)
- Industry Certification: None
- Weight: +1.0

5650 Civil Engineering and Architecture

Engineering and Architecture introduces students to the fundamental design and development aspects of civil engineering and architectural planning activities. Application and design principles will be used in conjunction with mathematical and scientific knowledge. Computer software programs should allow students opportunities to design, simulate, and evaluate the construction of buildings and communities. During the planning and design phases, instructional emphasis should be placed on related transportation, water resource, and environmental issues. Activities should include the preparation of cost estimates as well as a review of regulatory procedures that would affect the project design.

- Grade(s): 11, 12
- Required Prerequisites: 4802 Introduction to Engineering Design; 5644 Principles of Engineering
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Qualifies as a quantitative reasoning course
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: IVYT - DESN 105 - Architectural Design I (3)
- Industry Certification: None
- *Work-Based Learning Experience (Pending)*
- Weight: +1.0

5518 Aerospace Engineering

Aerospace Engineering should provide students with the fundamental knowledge and experience to apply mathematical, scientific, and engineering principles to the design, development, and evolution of aircraft, space vehicles and their operating systems. Emphasis should include investigation and research on flight characteristics, analysis of aerodynamic design, and impact of this technology on the environment. Classroom instruction should provide creative thinking and problem-solving activities using software that allows students to design, test, and evaluate a variety of air and space vehicles, their systems, and launching, guidance and control procedures.

- Grade(s): 11, 12
- Required Prerequisites: 4802 Introduction to Engineering Design; 5644 Principles of Engineering
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals

- Qualifies as a quantitative reasoning course
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: +1.0

5534 Computer Integrated Manufacturing

Computer Integrated Manufacturing is a course that applies principles of rapid prototyping, robotics, and automation. This course builds upon the computer solid modeling skills developed in Introduction of Engineering Design. Students will use computer controlled rapid prototyping and CNC equipment to solve problems by constructing actual models of their three-dimensional designs. Students will also be introduced to the fundamentals of robotics and how this equipment is used in an automated manufacturing environment. Students will evaluate their design solutions using various techniques of analysis and make appropriate modifications before producing their prototypes.

- Grade(s): 11, 12
- Required Prerequisites: 4802 Introduction to Engineering Design; 5644 Principles of Engineering
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Qualifies as a quantitative reasoning course
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Concentrator B Course
- Dual Credit Alignment: None
- Industry Certification: None
- Weight: +1.0

5698 Engineering Design and Development

Engineering Design and Development is an engineering research course in which students work in teams to research, design, test, and construct a solution to an open-ended engineering problem. The product development life cycle and a design process are used to guide the team to reach a solution to the problem. The team and/or individual(s) communicates their solution to a panel of stakeholders at the conclusion of the course. As the capstone course in the Engineering Pathway, EDD engages students in critical thinking, problem-solving, time management, and teamwork skills.

- Grade(s): 12
- Required Prerequisites: 4802 Introduction to Engineering Design; 5644 Principles of Engineering; and one Concentrator B engineering course (courses available include: 5538 Digital Electronics, 5650 Civil Engineering and Architecture, 5518 Aerospace Engineering, or 5534 Computer Integrated Manufacturing)
- Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
- Counts as a directed elective or personalized elective for all diplomas and readiness seals
- Qualifies as a quantitative reasoning course
- Fulfills STEM-Focused Credit for diploma and readiness seals
- NLPS Alignment: Capstone Course
- Dual Credit Alignment: None

- Industry Certification: None
- *Work-Based Learning Experience (Pending)*
- Weight: +1.0

Work-based Learning Experiences

Work-based Learning Experiences (WBL) are an instructional strategy that can be implemented as a standalone course or a component of any advanced CTE course that prepares students for college and career. WBL provides a sustained interaction between participants and industry professionals in real or simulated workplace settings. These experiences foster authentic work experience and develop knowledge, skills, and competencies within their area of interest. Experiences support participants in career exploration and readiness and are intentionally aligned and evaluated with course and training competencies. WBL requires a written partnership agreement and training plan between the participant, parent or guardian, school, and employer partner to guide the student's work based learning experiences and assist in evaluating progress and performance, whether WBL is a standalone course or a component of a discipline-specific CTE course.

Embedded Work-based Learning Experience

An embedded WBL experience is when a student participates in an experience required by the standards of a course in which the student is enrolled. These experiences most commonly take place during allotted class time, rather than outside of school hours.

Standalone Work-based Learning Experience

5974 Work Based Learning Capstone

This course is designed for a student who has completed (or is co-enrolled) in at least one advanced CTE course and is participating in an experience aligned to his or her CTE program of study that meets all elements of the WBL definition. This course requires a student complete (or be co-enrolled) in an advanced CTE course in their CTE pathway. This WBL course provides students the opportunity to gain expertise in a specific occupation aligned to the student's CTE pathway. The course occurs in real workplace settings and involves an employer assigning a student meaningful job tasks to develop his or her skills, knowledge, and readiness for work. A clear partnership agreement and training plan is developed by the student, parent or guardian, school, and employer partner to guide the student's work-based experiences and assist in evaluating achievement and performance. Related instruction shall be organized and planned around the activities associated with the student's individual job and career objectives in their pathway and shall be taught either on-the-job or in a classroom setting during the same semester the student is participating in the work-based experience. The related instruction should cover: (a) employability skills, and (b) specific occupational competencies to help prepare the student for further education and training or employment within their career pathway. **The student must provide his/her own transportation to and from job situations and be willing to work a minimum of fifteen hours per week.**

- Grade(s): 12
- Credits: 2 Semester course; 1 - 3 credits per semester; maximum of 6 credits
 - 5974FA/SA (1 Block)
 - 5974FB/SB (2 Blocks)
 - Combination of both 1 Block and 2 Block courses (3 blocks)
 - Counts as a directed elective or personalized elective for all diplomas and readiness seals

0530 Career Exploration Internship (CEI)

The Career Exploration Internship (CEI) course consists of a paid or unpaid work experience that provides for workplace learning aligned to a student's career interests. Unlike the Work-Based Learning Capstone course in which students participate in a WBL experience aligned to a specific occupation within their CTE pathway, CEI is intended for students in which the experience is not related to their program of study. In addition to their workplace learning activities, students participate in (1) regularly scheduled meetings with their classroom teacher, or (2) a regularly scheduled seminar with the teacher for the purpose of helping students make the connection between academic learning and their work-related experiences.

A clear partnership agreement and training plan is developed by the student, parent or guardian, school, and employer partner to guide the student's work-based experiences and assist in evaluating achievement and performance. Specific instructional standards tied to the career cluster or pathway and learning objectives for the internship must be written to clarify the expectations of all parties. **The student must provide his/her own transportation to and from job situations and be willing to work a minimum of fifteen hours per week.**

- Grade(s): 10, 11, 12
- Credits: 2 Semester course; 1 - 3 credits per semester; maximum of 6 credits
 - 0530MF/MS (1 Block)
 - 0530FB/SB (2 Blocks)
 - Combination of both 1 Block and 2 Block courses (3 blocks)
 - Counts as a directed elective or personalized elective for all diplomas and readiness seals

0543 Work-Based Learning Level 1: Employability Skills Development

The Work-Based Learning Level 1 course consists of a paid or unpaid work experience that provides for workplace learning aligned to a student's career interests AND is under 75 hours in length. The experience must be a minimum of 25 hours in order to qualify as a work-based learning experience. WBL Level 1 is intended for students in which the experience is not related to their program of study. These can include experiential activities when school is not in session during school breaks.

This level includes experiential activities that can occur in workplaces or school-based enterprises and involve an employer assigning a student meaningful job tasks to develop his or her skills, knowledge, and readiness for work. A clear partnership agreement and training plan is developed by the student, parent or guardian, school, and employer partner to guide the student's work-based experiences and assist in evaluating achievement and performance. **The student must provide his/her own transportation to and from job situations.**

- Grade(s): 10, 11, 12
- Credits: 1 per experience
- Counts as a directed elective or personalized elective for all diplomas and readiness seals

Additional Information on MCIT Clubs & Programs

ACE MENTORING - Architecture, Construction and Engineering

<https://acementor.org>

Engage, excite and enlighten high school students to pursue careers in architecture, engineering and construction through mentoring.

CAP - Civil Air Patrol

<https://www.gocivilairpatrol.com>

Aerospace Education, CADET programs, Emergency Services, Civilian Air Force Cadets

DECA - Distributive Education Clubs of America (Marketing and Business)

www.deca.org

Provides members and advisors with development activities through local and national competitions.

FBLA - Future Business Leaders of America

<https://www.fbla-pbl.org>

Local and national competitions

HOSA - Future Health Professionals

<http://www.hosa.org>

Biomedical Sciences and Health Sciences students. HOSA is a national student organization whose mission is to promote career opportunities in the health care industry.

NTHS - National Technical Honor Society

<https://nthhs.org>

Encourages higher scholastic achievement, cultivates a desire for personal excellence, and helps top students find success in the workplace.

ROBOTICS - F.I.R.S.T Robotics and VEX Robotics

<https://www.firstinspires.org/robotics/frc>

Grades 9-12, local and national competitions

SKILLS USA - All Career and Technical students compete locally and nationally in skills and leadership.

<https://www.skillsusa.org>