Senior High School

Strengthened Program| RAM Model

Prospectus

Academic Pathways

Those students who opted to enroll in the APC Strengthened SHS Program are required to choose one out of the six Academic Pathways during the intake procedure in Grade 11, Term 1. Each pathway aims at supporting APC's college courses and industry partnerships, thus creating a meaningful and well-defined link from senior high school to college and one's professional career.

2. Engineering and Applied Technology

Pathway Description

The Engineering and Applied Technology Pathway bridges the gap between theoretical discovery and practical execution. Students develop a high level of scientific literacy, exploring how the laws of physics, chemistry, and biology serve as the foundation for modern technological innovation. Rather than studying science in isolation, learners examine the mechanics of nature and machines by understanding how energy, materials, and complex systems are harnessed to build a sustainable world.

Through hands-on, project-based learning inspired by APC's Real Projects. Real Learning. philosophy, students apply quantitative reasoning and systematic logic to solve industrial, environmental, and technical challenges.

Skills Developed

- Systematic problem-solving grounded in physics, chemistry, and the life sciences
- Technological literacy and the ability to analyze, model, and optimize complex systems
- Applied scientific principles for the design of sustainable technology and infrastructure
- Quantitative reasoning using advanced mathematical applications for technical design
- Scientific analysis of material properties, environmental impact, and mechanical systems
- Technical adaptability in applying scientific theory to real-world engineering challenges

Future Higher Education Programs

- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electronics Engineering
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Environmental and Sanitary Engineering

Curriculum Overview

The table below outlines the curriculum structure for this pathway. Elective subjects are to be finalized; placeholder codes are provided for planning purposes.

Course Code	Course Name	Course Description
SHEFCOM SHMAKOM	Effective Communication/Mabisang Komunikasyon	This course develops bilingual communicative competence in both English and Filipino, preparing students to engage confidently across academic, professional, and real-world contexts. Grounded in the B2 level of the Common European Framework of Reference, learners build the voice, versatility, and ethical awareness of professionals ready to contribute in a multilingual and globally connected world.
SHGMATH	General Mathematics	This course builds students' mastery of core mathematical concepts — from algebra and geometry to statistics — applied through the lens of their chosen career pathway. Learners develop the quantitative reasoning and data-driven decision-making skills that form the backbone of any professional career in technology, business, engineering, or the creative industries.

SHGNSCI	General Science	This course takes a transdisciplinary approach to Physics, Chemistry, Biology, and Earth and Space Science, building the scientific literacy students need to understand real-world phenomena and drive innovation across any career pathway. Through hands-on experimentation and evidence-based problem solving, learners develop the critical and scientific thinking skills essential for a technology-driven, globally competitive world.
SHLCSKL	Life and Career Skills	This course develops the personal, social, and professional competencies students need to thrive across the workplace, community, and beyond — from self-awareness and resilience to leadership and adaptability. Treating health, wellness, and career readiness as interconnected foundations, learners build the mindset and life skills to navigate transitions confidently into higher education, employment, or entrepreneurship.
SHPKLPI	Pag-aaral ng Kasaysayan at Lipunang Pilipino	Ang kursong ito ay sumusuri sa mga isyu at usaping panlipunan at pangkasaysayan sa pamamagitan ng tematiko, multikultural, at interdisiplinaryong pananaw, na nagbibigay sa mga mag-aaral ng malalim na pag-unawa sa pagkakakilanlan at kapalaran ng bansang Pilipinas. Higit sa pagsasaulo ng mga pangyayari, nalilinang sa mga mag-aaral ang kamalayang sibiko at ang responsibilidad bilang mga propesyonal na handang mag-ambag sa napapanatiling pag-unlad ng bansa at ng daigdig.
SHETECH	Empowerment Technologies	This course builds students' digital competency through hands-on experience with productivity tools, basic programming, digital citizenship, and emerging technologies — developing the technical fluency and responsible digital habits expected of professionals across any field. Learners apply these skills purposefully across their chosen pathway, establishing a cross-cutting digital foundation that carries into every subject and, ultimately, into their careers.
SHPHY01	Physics 1	This course builds a foundational understanding of how the physical world operates — exploring the interactions of matter, motion, and energy through conceptual inquiry and quantitative problem-solving. Learners examine how the principles of physics underpin the technologies and systems that define modern life, developing the scientific reasoning and technical grounding essential for careers that demand precision and analytical thinking.
SHCHEM1	Chemistry 1	This course examines the composition, structure, and transformation of matter — from chemical nomenclature and stoichiometry to real-world applications in environmental systems, industrial processes, and sustainable resource use. Learners develop the analytical thinking and quantitative problem-solving skills essential for scientific and technical fields, grounded in a commitment to responsible practice aligned with the United Nations Sustainable Development Goals.

SHERSP1	Earth and Space 1	This course explores Earth's interconnected systems and natural resources — from renewable energy and ecosystem conservation to the geological and atmospheric forces behind natural hazards such as earthquakes, floods, and storms. Grounded in the Philippine context, learners develop the environmental literacy and systems thinking needed to promote sustainability, assess community risks, and design strategies for disaster preparedness and resilience.
SHPHY02	Physics 2	This course covers fundamental principles across waves, acoustics, optics, electricity, electromagnetism, and modern physics — exploring how these concepts explain natural phenomena and drive advancements in technology, engineering, and medicine. Through investigation, analysis, and real-world problem solving, learners develop the scientific reasoning and appreciation for physics as a force that shapes society and improves quality of life.
SHFDATA	Fundamentals of Data Analytics	This course introduces students to the full data lifecycle — from collection and processing to visualization and storytelling — building the analytical skills needed to thrive in an increasingly data-driven world. Learners develop the critical thinking and digital literacy to transform raw data into clear, compelling insights that drive evidence-based decision-making across any professional field.
SHPCAL1	Precalculus 1	This course develops students' mathematical fluency in analytic geometry and trigonometry — building the conceptual understanding and problem-solving precision needed to model and interpret real-world phenomena through a mathematical lens. Learners establish the quantitative foundations essential for advanced mathematics, physics, and engineering, developing the analytical rigor and spatial reasoning that define capable professionals in technically demanding fields.
SHPCAL2	Pre-calculus 2	This course focuses on solid mensuration, differentiation, and integration as key concepts for understanding mathematical relationships and solving problems. Learners study the measurement of three-dimensional objects, rates of change, and accumulated quantities, linking these ideas to practical and real-world situations. The course emphasizes analytical reasoning, accurate computation, and clear representation of mathematical solutions. Effective communication of mathematical ideas is developed through explanations, symbols, graphs, and structured problem-solving
SHRSCHM	Research Methods	This course guides students through the complete research process — from designing methodologies and gathering data to analyzing findings and communicating conclusions with clarity and integrity. Learners develop the critical thinking and ethical grounding needed to produce credible, evidence-based work that drives informed decision-making across any academic or professional field.

SHAMAT1	Advanced Mathematics 1	This course advances students' mathematical fluency across algebra, trigonometry, probability, and statistics — with a special focus on inferential statistics as a tool for drawing meaningful conclusions from real-world data. Using contemporary digital tools, learners build the quantitative and analytical foundation that serves as the academic backbone for pathways in computing, engineering, data science, and beyond.
SHFIELD	Field Exposure	This course marks the culminating term of the program — a full suspension of traditional classes in favor of an intensive, pathway-specific Mastery Bootcamp where everything learned across five terms is brought to life in a single, unified Signature Work. Students step fully into their Professional-in-Training identity as practitioners, with their capstone output assessed through a final Portfolio Rating against all nine Graduate Attributes — serving as both their term examination and their most compelling proof of readiness for higher education, employment, or entrepreneurship.