

KVIS

KAMNOETVIDYA
SCIENCE ACADEMY

Nurturing a new generation of scientists and researchers



The logo for KVVIS Kamnoetvidya Science Academy is centered on the page. It features the acronym 'KVVIS' in a large, bold, sans-serif font. The 'K' is green, the 'V' is purple, and the 'I', 'S', and 'S' are dark purple. Below the acronym, the words 'KAMNOETVIDYA' and 'SCIENCE ACADEMY' are stacked in a smaller, bold, sans-serif font. 'KAMNOETVIDYA' is dark purple, and 'SCIENCE ACADEMY' is green.

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H.R.H. Princess Maha Chakri Sirindhorn bestowed the name Kamnoetvidya, meaning “the genesis of knowledge,” on Kamnoetvidya Science Academy (KVIS) and graciously presided over the school’s opening ceremony on August 6, 2015. These were acts of immeasurable royal grace for both the school and PTT Group.

Power of Learning Foundation and PTT Group hereby vow to make KVIS one of Thailand’s premier sources of knowledge in science and mathematics. We vow that KVIS will not only impart knowledge but also nurture its students into wise and socially conscious researchers, inventors, and innovators who respect both nature and humankind.

PTT GROUP VISION

Education has become a tool for developing human lives and thus a tool for raising a country's social capital. Thailand's National Education Plan sets the objective of developing an education system that is focused on building conscientious, moral, intelligent, and happy teachers and students, is supported by the correct use of diverse teaching media, and is shaped by participation from all sectors of society. PTT Group participates in this process by promoting education in science and technology to foster the skilled human capital needed for national competitiveness and to forge Thailand into a "knowledge-based society."



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Message from the Founder and Chairman of the Kamnoetvidya Science Academy Governing Board



“Science and technology are powerful devices for building up Thailand’s competitiveness. Education is the engine that will fuel this shift of an efficiency-driven economy to an innovation-driven economy.”

Thailand’s major 4.0 national goal is to move from the current efficiency-driven economy to an innovation-driven economy. In 2016, a strong tripartite partnership involving the government, public and private sectors was formed to support frontier research in the country, a result that led to the zoning of an innovation zone - the Eastern Economic Corridor of Innovation (EECi). Central to this corridor is the PTT’s Wangchan Educational Park, with two of the country’s leading educational institutions playing integral roles in shaping the nation’s most valuable resources – people.

Kamnoetvidya Science Academy (KVIS), a name bestowed by Her Royal Highness Princess Maha Chakri Sirindhorn, which means “the genesis of knowledge” is a science academy for gifted secondary school students interested in pursuing careers in natural sciences, technology and engineering. Vidyasirimedhi Institute of Science and Technology (VISTEC) is a science and technology research-based university for aspiring postgraduates keen on creating groundbreaking innovations and building knowledge through original and unique research. Both institutions were founded in 2015 by the PTT Group under the belief that highly skilled, creative, compassionate and entrepreneurial human capital are the pillars of an innovative value chain.

The PTT Group provides the school with financial support and promotes true academic freedom, giving autonomous administrative powers and student selection independence to the administrators. All students attend the academy on a full non-binding 3-year scholarship. The Group’s only desires are for the KVIS graduates to uphold their obligations to use their intellectual and emotional intelligence in a morally manner, and to utilize their skills and talents to contribute to their nation through the pioneering of innovations that address common problems in the world.

Today, these skills and talents are already bearing fruits. Within four years of inception, KVIS students have achieved both local and international accolades for their outstanding research projects at high profile events including Intel ISEF (USA), Conrad Spirit of Innovation Challenge (USA), INFORMATRIX (Romania) and many others. Besides that, the students have shown remarkable performances as the country representatives at the International Science Olympiads. Research papers written by KVIS students have also been featured in prominent international scientific journals. One of the proudest accomplishments is to have one of the students' research invention being registered for petty patent license this year.

These achievements are just the beginning of many milestones to come. The school's customized curriculum and use of English as a medium of instruction in all core subjects have resulted in commendable performances in standardized examinations. The average TOEFL-ITP scores of graduates of class 2018 and 2019 were at 555 and 574 respectively. The students' average SAT and AP standardized test scores are both well above the average scores of international students.

Our road to success has begun and the investments made today in KVIS students will eventually see a growth in qualified human resources in the much-needed research and development fields for the country to propel forward and maintain sustainable prosperity for its people.

Pailin Chuchottaworn, Ph.D.
Chairman

Message from the KVIS Principal

Welcome to Kamnoetvidya Science Academy

Founded in 2015, Kamnoetvidya Science Academy (KVIS) exists to help students demonstrating promise in science and mathematics grow into tomorrow's innovators and discoverers. KVIS is generously funded by the PTT Group as part of that organization's larger vision of promoting higher education and building Thailand's skilled workforce. We are a STEM-based, full-boarding private school for just 216 total students in grades 10, 11, and 12. Our small student body, small class sizes, 6:1 student-to-teacher ratio, and staff of more-than-qualified teachers make possible the personalized guidance that high-ability students need to fulfill their promise and to help solve today and tomorrow's global challenges.

KVIS is the result of the vision and passion of Dr. Pailin Chuchottaworn, the former president and chief executive officer of PTT Public Company Limited. Dr. Chuchottaworn has shown unwavering commitment to the school since its beginning. Also instrumental in KVIS's founding was Principal Emeritus Dr. Thongchai Chewprecha. Dr. Chewprecha, as the principal and director during KVIS's first three years (2015 to 2018), worked tirelessly to make KVIS the world-class institution that it is today.

KVIS and its neighbors, Vidyasirimedhi Institute of Science and Technology (VISTEC) and the PTT Forestry Institute, form the Wangchan Valley Complex in Thailand's Rayong province. The complex was built among fruit, rubber, and oil palm plantations and still retains some of the land's original trees, which contribute to the KVIS campus's lush and verdant landscaping. From this quiet and tranquil setting will come quiet, focused, and clear minds able to creatively address both fundamental questions of science and challenges to global sustainability.



Training students to solve challenges is what KVIS does every day through a curriculum encouraging inquiry-based and problem-based teaching methodologies. This curriculum continuously confronts KVIS students with advanced questions and challenges. KVIS is also a research center, where each student makes full use of the school's state-of-the-art facilities and equipment to complete a comprehensive research project required for graduation. Some of these research projects have been presented at international invitational fairs and competitions and have received numerous awards. Some KVIS research has even been published in academic journals.

The success of its science projects is only one reason KVIS has become a truly international institution. To prepare its graduates for study outside of Thailand and for the international collaboration that is now a crucial part of scientific research, KVIS uses English, today's most common *lingua franca*, as its medium of instruction. The advanced English skills KVIS students develop enable them to befriend and cooperate with students from around the world, which makes KVIS's global partnerships possible. KVIS has MOUs with 15 foreign schools in 10 countries or territories: the Republic of Korea, the United States, Japan, the Netherlands, the Philippines, the Russian Federation, Indonesia, the United Kingdom, Canada, and the Hong Kong Special Administrative Region of the People's Republic of China. These partnerships facilitate student exchanges, long-term teacher exchanges, collaborative research projects, science fairs, guest lectures, visits to research centers, and other activities.

These connections made with students from around the world help KVIS students to think globally. Just as important as the ability to think globally is the ability to act locally, and our students are thus required to give 80 hours of service before graduation to the local community. One common way KVIS students contribute to the community is by assisting teachers at nearby schools and providing students in large classes with individual attention and tutoring.

Graduates also need to be well-rounded and educated beyond science and mathematics. To this end, KVIS students are required to read several dozen books, including some literary classics, outside of class. Students are also required to participate in nine different semester-long clubs, which include sports clubs, cultural clubs, and academic clubs.

These extracurricular activities foster personal development and senses of citizenship, social responsibility, and compassion in our students as they grow into adulthood. As KVIS students develop strong and sound moral judgment, the power that they gain from science and mathematics will become power for the betterment of all.

Rachain Kosanlavit, Ph.D.
Principal



Vision

Be a world leading science high school. Nurture future researchers, inventors, and innovators to strengthen sustainable national development.

Goals

Cultivate creative thinking to drive future innovation

Create knowledge for sustainable national development

Provide world-class education

Lay the foundations for a strong scientific and technological education system that will spur the country's development in the coming decades

Build a knowledge-based society through the combination of natural and scientific methodologies

As an extension of PTT Group's recent initiative to make Thailand beautiful and healthy by growing trees throughout the country, Kamnoetvidya Science Academy (KVIS) was founded to grow wisdom for the national good.





Conceptual Design of KVIS

Holistic Education

The arrangement of the school's physical environment focuses on supporting diverse learning processes, being convenient for interdisciplinary learning, providing opportunities for knowledge exchange, and extending creative thinking and innovation.

Environmental Stewardship

KVIS strives to live in harmony with nature by conserving energy and minimizing impacts on the institution's natural surroundings.

Scientific Identity

Echoing the institution's identity, the building design is based on scientific and technological principles.





Ecological Landscaping

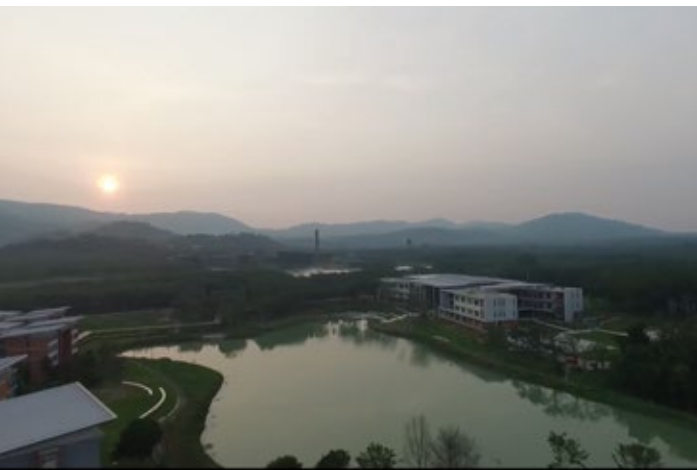
Incorporating local forests into the school's landscape provides opportunities to support scientific learning and research, increase students' understanding of nature, and grow students' knowledge of local plants and ecosystems.



KVIS: Building in Harmony with Nature

Visitors to KVIS will notice state-of-the-art buildings and equipment existing within a green landscape full of wild flora and fauna. To ensure that the school impacts local ecosystems as little as possible, careful planning ensured that only the most suitable spots on the school's 160 rai (63 acre) area were selected as construction sites. The KVIS campus points toward a future where technology and nature coexist harmoniously.





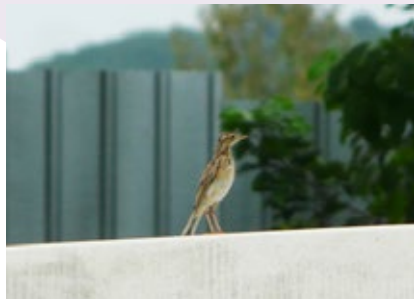
Visitors will also notice an extensive cycle path winding throughout the Wangchan Valley Complex and connecting KVIS, VISTEC, and the PTT Forestry Institute. This path enables easy, carbon-free transport within and between these institutions, thus encouraging students and staff to ride bicycles. In addition to promoting a physically active student body and staff, using bicycles helps to save energy, minimize the school's carbon footprint, and reduce local air pollution. The cycle path also facilitates cooperation and resource sharing between KVIS, VISTEC, and the PTT Forestry Institute.

Efficient use of each building is also encouraged, with common areas providing space for various activities.

In addition to teaching the school's young inventors and innovators about living in harmony with nature, the school's surroundings provide inspiration and opportunities for first-hand observations and research.

From the classrooms and laboratories to the dormitories and sports grounds, a system of appropriate, meaningfully designed, and efficiently used built spaces in a nurturing landscape is critical for shaping a proper learning environment. In addition to learning from their peers and teachers, KVIS students learn from the architecture and ecosystems that surround them. The next generation's researchers and scientists who study at KVIS will become well-rounded individuals with well-developed social and environmental ethics.

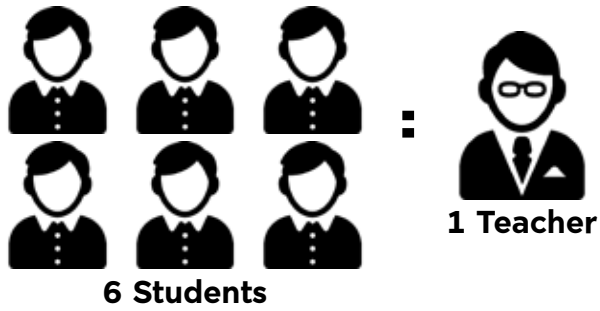




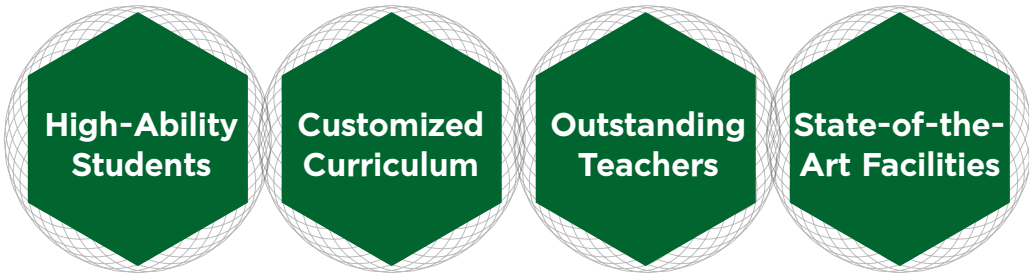
Small Class Sizes with a Low Student-to-Teacher Ratio

KVIS is a full boarding school providing education to students in grades 10, 11, and 12. To provide customized training that fits the needs of each individual, yearly enrollment is maintained at 72 students, for a total enrollment of 216 students. This makes possible the school's six-to-one student-to-teacher ratio. Each of the three grades has four classes, with each class capped at 18 students.





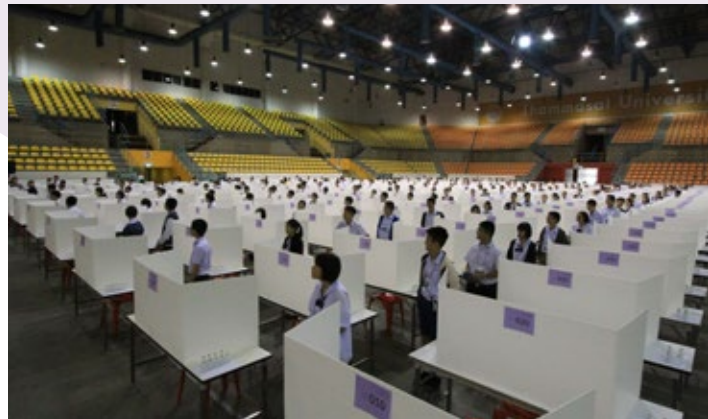
Keys to Success



High-Ability Students

Each year, between 5,000 and 7,000 students from across Thailand, all meeting initial prerequisites including a GPA of at least 3.50, apply for admission into KVIS. Because KVIS has space for only 72 of these students, a rigorous and competitive admissions process is necessary.





This process is conducted with the utmost possible integrity and transparency and strives to identify the nation's best high-ability students to ensure that they are given opportunities to fulfill their potential as Thailand's future leaders and innovators.

The selected 72 students are chosen after two rounds of screening. In the first round, all 5,000 to 7,000 applicants take a screening test at one of 11 regional testing centers spread across Thailand. Only the top 300 test-takers are selected for the second round of screening, which evaluates these prospective students through further tests, including a practical science examination, and through a student portfolio assessment.

Because KVIS uses English as its medium of instruction, students selected by this extensive recruitment process are provided with online English lessons throughout the year before they enter KVIS. These incoming students also attend intensive English camps during school vacations in October and May.



Customized Curriculum

The KVIS curriculum is flexible and designed to fit individual needs and abilities. The school's core courses meet the requirements of Thailand's National Curriculum, and additional and elective courses are designed to challenge KVIS students and nurture their special abilities. The additional courses in biology, chemistry, and physics are divided into two levels: fundamental and advanced. Every student is required to take the advanced course in at least one of those three subjects.

Despite its small size, KVIS offers a wide range of elective courses, including courses in advanced mathematics, advanced informatics, art, music, the social sciences, Thai language, design and technology, and others.

In addition to completing regular courses, KVIS students must complete a research project before graduation. For this project, they must complete a full research report and present their work through both an oral presentation and a scientific poster presentation at the school's annual science fair or at a similar national or international event. They must also publish their work in either the school's journal or a professional journal.

Also before graduation, KVIS students attend lectures and demonstrations by visiting scholars, gain work experience at local research centers, and work closely with outstanding scientists and researchers. Students also undertake additional book reading, community service, and a variety of weekly





club activities. Each semester, KVIS students can choose among about 20 clubs to join, including athletic clubs, cultural clubs, such as art, music, and dance clubs, and academic clubs.

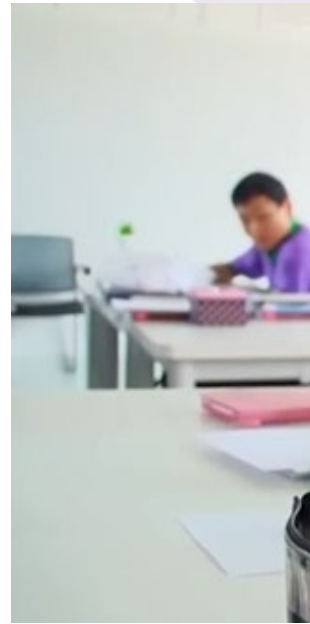
Hands-on, inquiry-based, project-based, and problem-based learning are encouraged at KVIS. Integrated or interdisciplinary activities, programs, and lessons also form key components of the curriculum. Thus, the STEM concept is also emphasized, exposing students to science and technology through a range of sources and situations.

Additionally, through team teaching, KVIS students are provided with regular interactions with teachers from various backgrounds, which is used to increase students' motivation.



Required Credits for Core, Additional, and Elective Courses (1 credit = 20 periods)

Subject	Core	Additional	Elective
Thai	6.0	-	
Mathematics	6.0	8.0	
Science	6.0	22.5	
Social Studies and Culture			
•Social Studies	6.0		
•History	2.0		
Civic Duty		2.0	
Minimum Of 4 Credits			
Health and Physical Studies	3.0		
Art	3.0		
Design and Technology	3.0	1.0	
Foreign Language			
•English	6.0	6.0	
Second Foreign Language	-	2.0	
Total	41.0	41.5	4.0



Outstanding Teachers

The KVIS curriculum and its associated teaching and learning activities aim to produce graduates who are not only capable academically but also intelligent, conscientious, observant, and inquisitive. Graduates should also possess the necessary background to be successful scientists or researchers, including the ability to think systematically and reach logical solutions and the ability to make prudent decisions regarding the impacts their work has on society and the environment. KVIS graduates should display leadership, strong citizenship, and publicly oriented minds. They must also appreciate the importance of being STEM researchers and innovators to drive national and regional progress. Lastly, these graduates should be able to read and write English fluently.

Teaching is the most important key success factor in education. KVIS carefully selects high-performing teachers from a range of research fields. Each teacher not only has a very strong background in their teaching area but also demonstrates passion for teaching and enthusiasm for promoting KVIS goals and values.

KVIS invites experienced senior teachers from both Thailand and other countries to serve as mentors. These senior teachers work alongside the younger KVIS teachers either part-time, providing regular mentoring opportunities, or for periods of one to three months, providing intensive input during their short stays. Some senior teachers also continue to support the school by working with regular KVIS teachers online. The KVIS teaching staff thus has a youthful energy and enthusiasm guided by mentors with decades of experience.

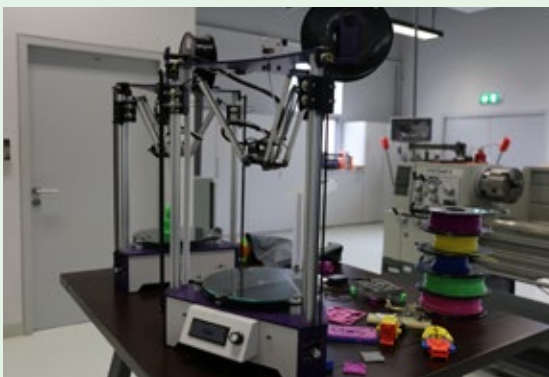


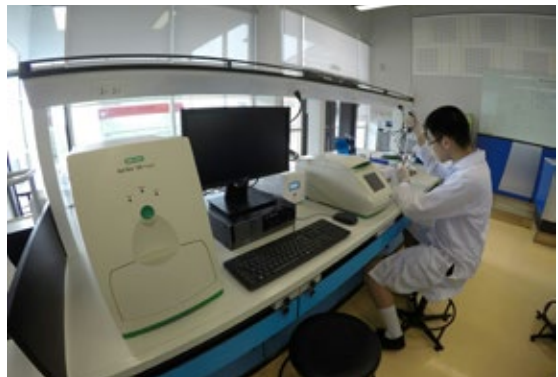
State-of-the-Art Facilities and Equipment

Since high quality buildings, equipment, and learning materials are vital to a school's success, at KVIS, their design, construction, and procurement are technically optimized. Care is taken to ensure that all supporting resources are sufficient for instructors and other staff to teach and care for students with maximum efficacy and efficiency.

To properly support the academic strengths and ambitions of both students and staff, the learning hardware and software at KVIS are kept up-to-date and world-class. For example, high-speed internet can be accessed at every point on campus. Dependable access, both inside and outside of the classroom, to online resources is vital to 21st century learning and is made possible at KVIS by this high-quality internet infrastructure.

In addition to the standard laboratory equipment required by the National Curriculum, KVIS has acquired many high-performing instruments to support students' and teachers' research activities and community services.

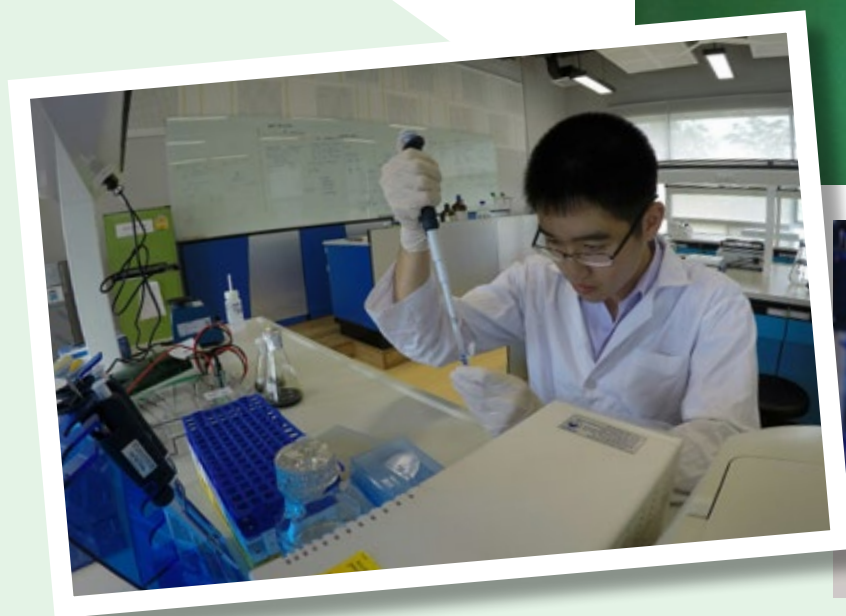




Biology Laboratories

The biology laboratories at KVIS provide state-of-the-art equipment of superior quality for KVIS students who are interested in cell biology, molecular biology, and microbiology. For example, students have access to a PCR machine with a high-performance gel documentation system, a Sorvall LYNX 4000 ultracentrifuge, and a shaking incubator. The labs also have a range of high-quality safety equipment, such as a class II laminar flow cabinet and an autoclave.

The biology team, whenever possible, conducts interactive and hands-on lessons, which are made possible by the availability of quality lab equipment, such as a full class set of high resolution light microscopes. This equipment also allows the biology team to fully support and guide student projects and enables both students and teachers to perform innovative research.





Chemistry Laboratories

KVIS chemistry laboratories feature both standard and above-standard laboratory equipment and facilities. The standard materials and equipment include various types of inorganic compounds, organic compounds, organic solvents, full class sets of titration and chemical kinetics test equipment, and Vernier equipment, including data loggers with a wide range of associated probes and sensors. Other equipment includes a cathode ray tube, a melt station, a centrifuge, a drying oven, and a rotary evaporation unit. This equipment makes possible the hands-on experiments and activities that the KVIS chemistry team uses to make their classrooms into active learning environments instead of lecture-based learning environments. KVIS chemistry students learn by performing real experiments related to their own day-to-day activities.





Physics Laboratories

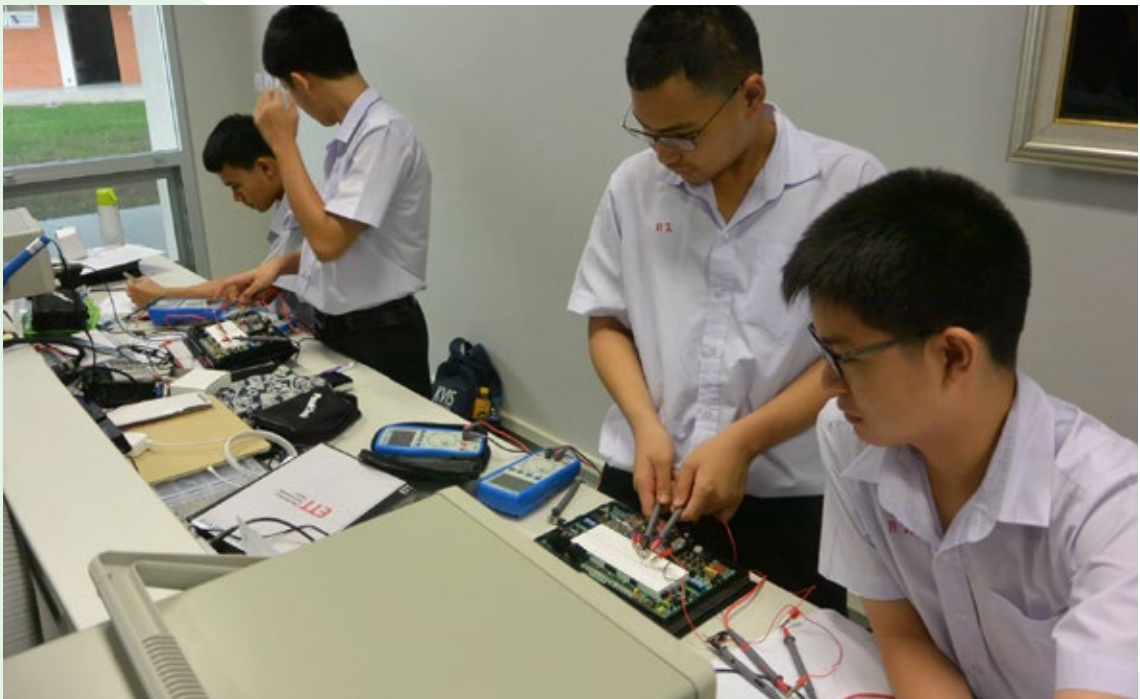
The KVIS physics laboratories are equipped with Labquest® data loggers and a range of associated sensors. Students use this equipment to measure position, force, pressure, magnetic field strength, voltage, current, temperature, light intensity, and other physical properties. The data loggers can simultaneously process data from multiple sensors in real time. Logger Pro® software on students' personal computers is then used for data analysis and graphing. The efficient collection of data made possible by this equipment allows students to spend more time learning, discussing, and evaluating experimental results.

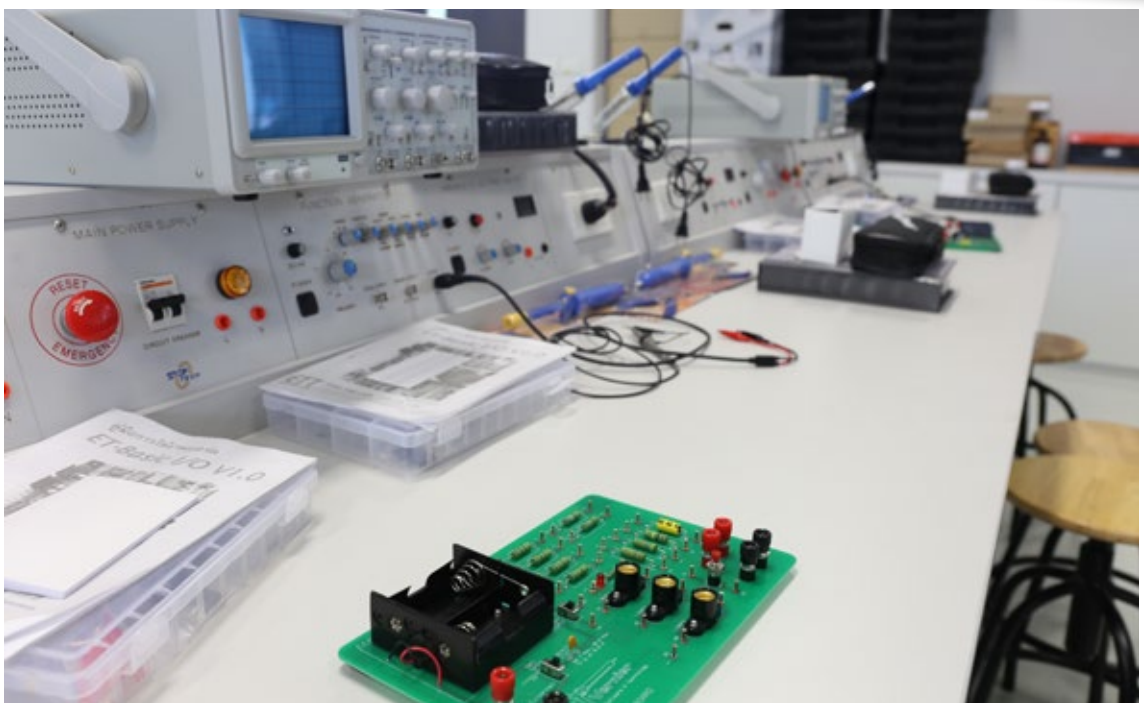




Electronics and Microcontroller Laboratory

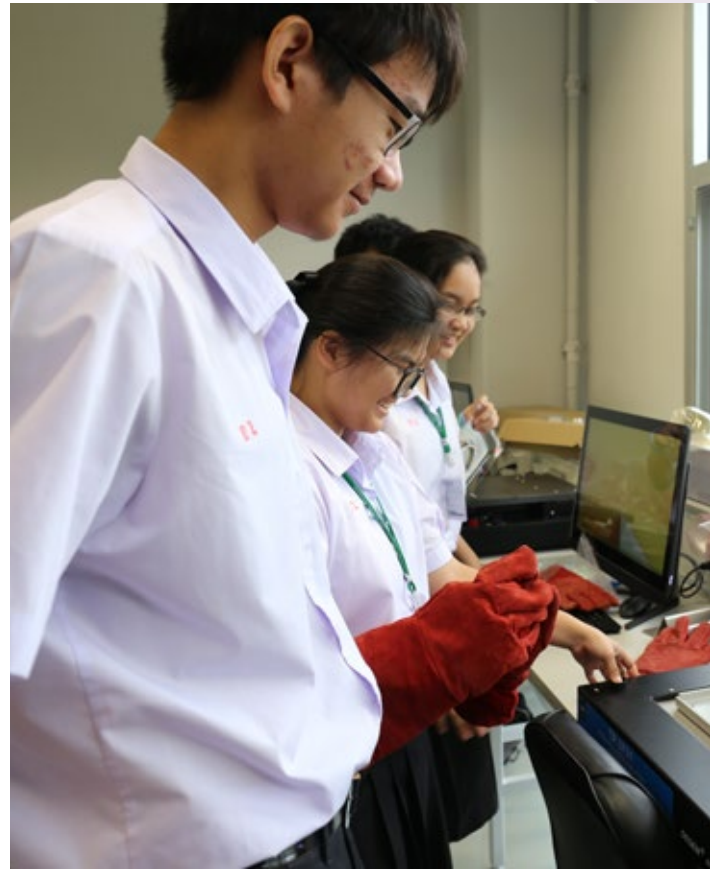
The KVIS electronics and microcontroller laboratory provides students with opportunities to do hands-on work with electronic circuitry and microcontrollers. Students have the freedom to plan and create projects using state-of-the-art instruments. This laboratory includes power supplies, signal generators, digital multimeters, oscilloscopes, various types of sensors, and programmable microcontroller boards.

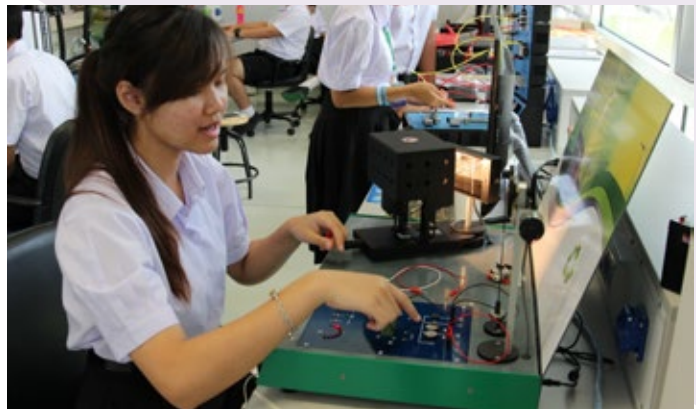


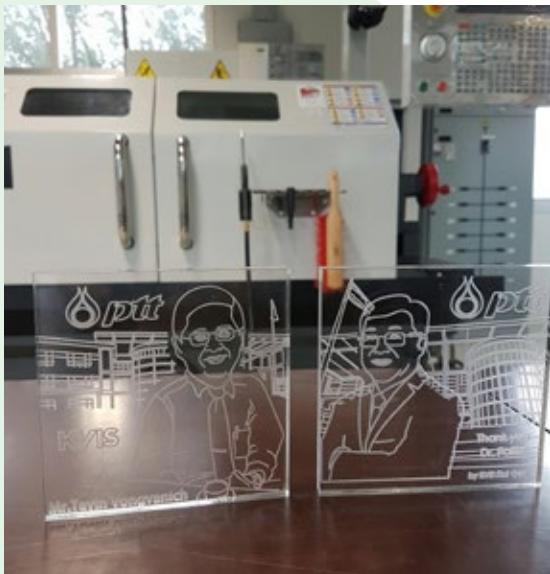


Industrial Technology Exploration Unit

Future innovators should be familiar with batch processes, automatic controls, and robotics, all of which are used in most of today's manufacturing operations. KVIS students learn about these technologies at the school's Industrial Technology Exploration Unit. This facility contains 10 work stations: a process control station, a sorting conveyor station, a Cartesian robot and computerized storage station, a polar robot and principles of robotics station, a vacuum forming station, a pressure forming station, a solar energy station, a hydraulics station, a pneumatics station, and a basic electronics station.









Design, Engineering, Technology, and Innovation Unit (DETI Unit)

The DETI unit facilitates students' learning by providing them with an appreciation for how things are made. Learning in this area begins by developing an understanding of how simple pieces of metal, wood, and plastic are manufactured. The DETI Unit houses a resistant materials workshop with drilling machines, lathes, milling machines, cutting belts, and other machinery.

Before learning the basics of workpiece manufacturing, students learn the basics of mechanical drawing so that they can communicate effectively with the manufacturers who will turn their ideas into functional products. Later, students are trained to use various machinery. From this training, students learn how each tool works, what products each tool can make, what current limitations exist for each tool, and how those limitations can be overcome.



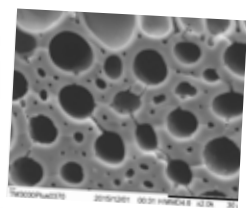
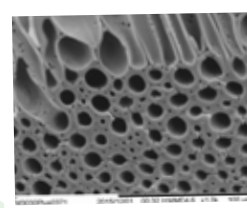
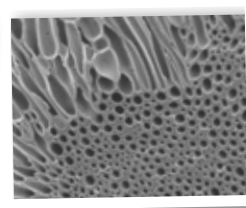
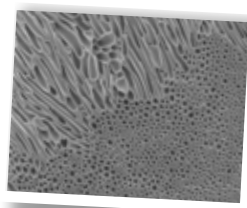
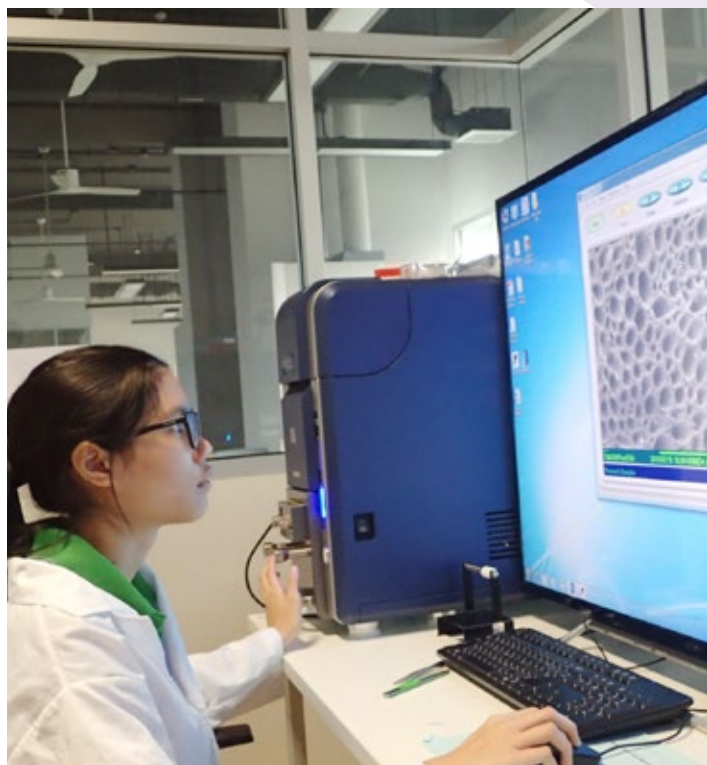
Central Research Laboratory

At KVIS, both students and faculty are expected to do research far above normal high school standards. Since this research is one of the school's main success factors, KVIS features a Central Research Laboratory with first-rate, university-level instruments.

These instruments include the following:

The Hitachi Tabletop TM 3030 scanning electron microscope (SEM) is a type of electron microscope that works by scanning a focused electron beam over a surface to create an image. The primary electron beam interacts with the sample, producing various signals (backscattered electrons and secondary electrons), which can be interpreted to obtain information on surface morphology and surface topography. An additional technique, energy dispersive X-ray analysis, can be done with the SEM to determine the chemical composition on a sample's surface.

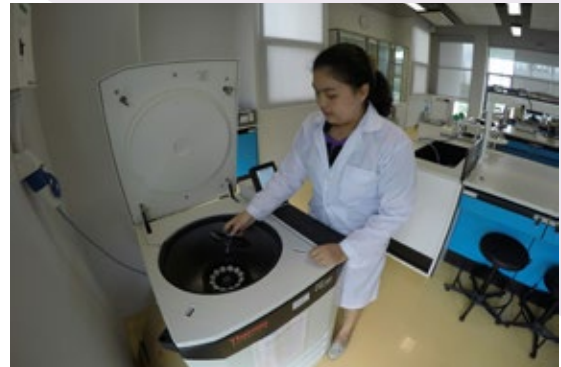
The PerkinElmer Spectrum Two Fourier Transform-Infrared (FT-IR) spectrometer is used to measure the infrared spectrum of absorption and emission as a function of wavelength (wavenumber). The molecular components and structures of organic and some inorganic materials can be identified using this analytical technique. The machine also has an attenuated total reflection (ATR) accessory, which can be used to characterize both solid and liquid samples by measuring changes that occur in a totally internally reflected infrared beam when the beam comes into contact with a sample.





The Hitachi U-2900 UV-Vis double beam spectrophotometer measures the total attenuation (absorption and transmission) of a beam from a visible and/or UV light source passing through a sample. Users analyze the total attenuation data to characterize the sample.

The Thermo Scientific Sorvall LYNX 4000 superspeed centrifuge is used to separate components of a complex mixture. It can spin at speeds of up to 24,000 rpm at controlled temperatures ranging from -10°C to $+40^{\circ}\text{C}$.



The GFL Shaking Incubator model 3033 is used to create reproducible growth at low and uniform speeds in cell cultures and other media. It has a capacity of 150 litres and operates at temperatures between 25°C and 70°C .





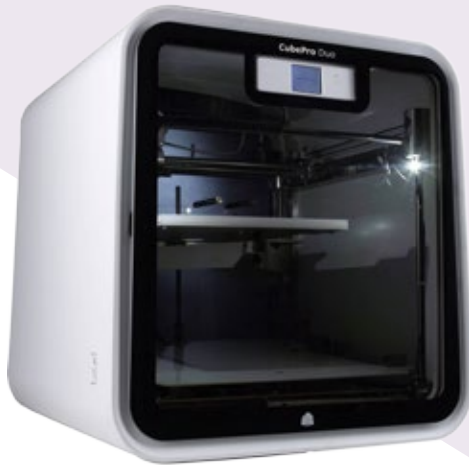
The Thermo Scientific NanoDrop One microvolume UV-Vis spectrophotometer is used for molecular biology research by measuring the concentration and purity of DNA, RNA, and protein samples. The machine requires samples of only one to two μL , which can be analyzed in seconds.

The Olympus i-SPEED 3 high-speed camera can record videos at frame rates of up to 150,000 fps, rendering it capable of capturing the details of many phenomena that occur within the range of a millisecond. It is used to study rigid body motion by capturing both the translational and rotational kinematics of an object as it moves. An example of a simple phenomenon that can never be seen with the naked eye but can be captured by the camera is shown in the sequence picture below. A clear plastic ball partially filled with blue liquid is dropped on a hard surface. The motion of the liquid inside the ball can be explored using the high-speed camera.



The FLIR T450sc infrared camera utilizes an uncooled bolometer to detect infrared signals in the range of $7.5 - 13 \mu\text{m}$ with a resolution of 320×240 pixels. The camera can show a temperature profile with a maximum temperature of up to 650°C at an accuracy of $\pm 1^\circ\text{C}$, $\pm 1\%$ (limited range). It can also track and show the maximum or minimum temperature in the frame. The camera can record both still images and videos. It is useful for experiments in which monitoring temperature distributions is essential.



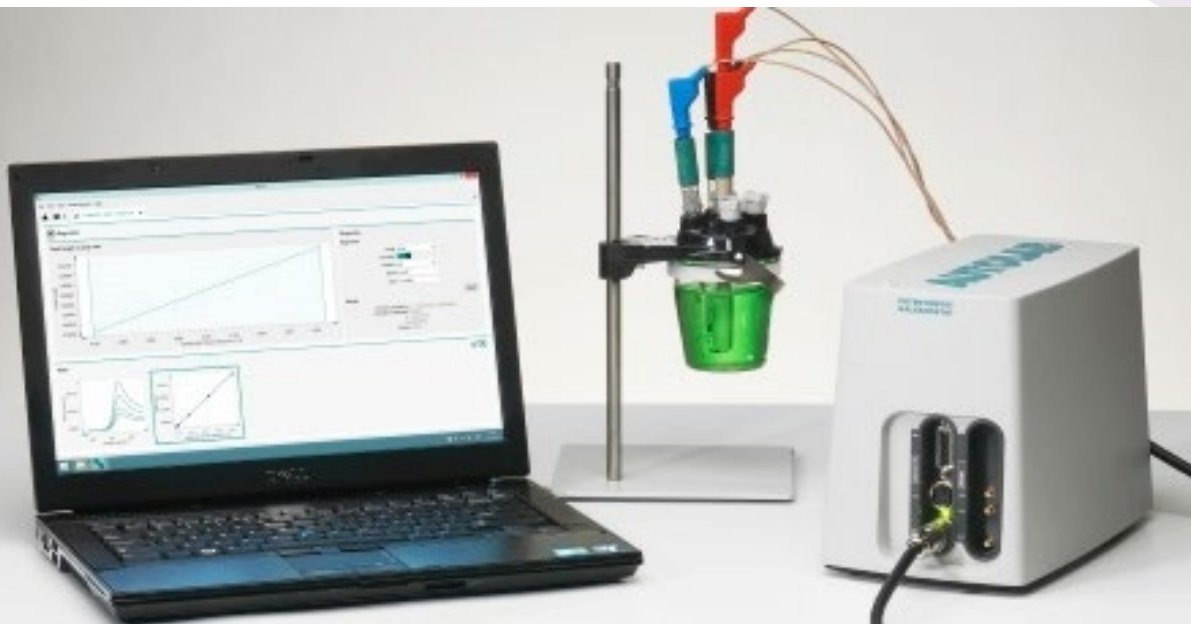


The CubePro 3D printer is used to make three-dimensional solid objects from digital files by laying down successive layers of material until the entire object is created. Each of these layers can be seen as a thin slice or horizontal cross-section of the eventual object. The process starts with making the virtual design of the object. The virtual design is made with a 3D modeling program in a CAD (computer-aided design) file, or with an accompanying 3D scanner, which can make a digital representation of any 3D object within a given size range.

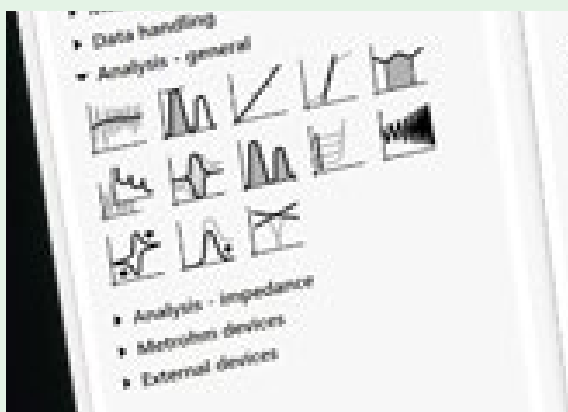
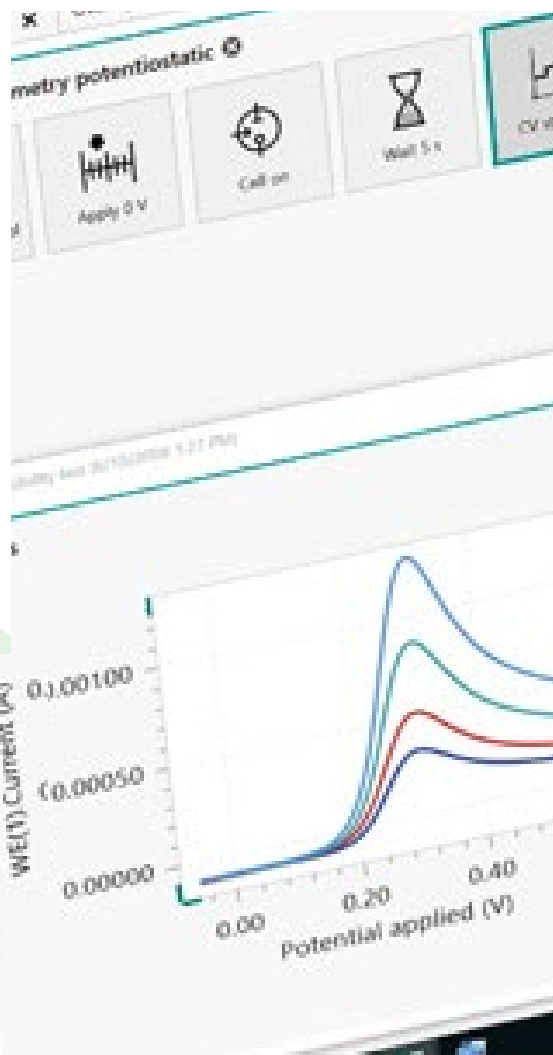


The Haas TM1P CNC milling machine and Haas TL1 CNC lathe machine are two industry-standard tools that help students transform their ideas into working products. This high-precision machinery creates objects starting from a 3D design, and can make any desired number of copies of an object while keeping the size of each copy identical within a range of ± 0.010 mm. KVIS science laboratories utilize these machines to produce a wide range of products, ranging from simple shapes like a sample holder to complex shapes like gears and parts for a robot.





The Metrohm Autolab PGSTAT204 potentiostat/galvanostat is used by students to measure electric potential and electric current. Its lightweight and compact design enable easy transport to different sampling sites. The device is particularly useful for research into electrochemical catalysts, which is an important area of research for the development of energy storage and electricity conversion technologies. This device includes a base potentiostat/galvanostat with a compliance voltage of 20 V and a maximum current of 400 mA.





The PerkinElmer FL6500 fluorescence spectrometer is a new edition to the Central Research Laboratory and provides data that complements data from the UV-Vis double beam spectrophotometer. The fluorescence spectrometer is used to characterize both organic and inorganic compounds by exciting a solid or liquid sample with UV radiation and measuring the corresponding fluorescent emissions. This technique benefits research in multiple fields, including materials science, environmental science, pharmaceutical science, and biology.

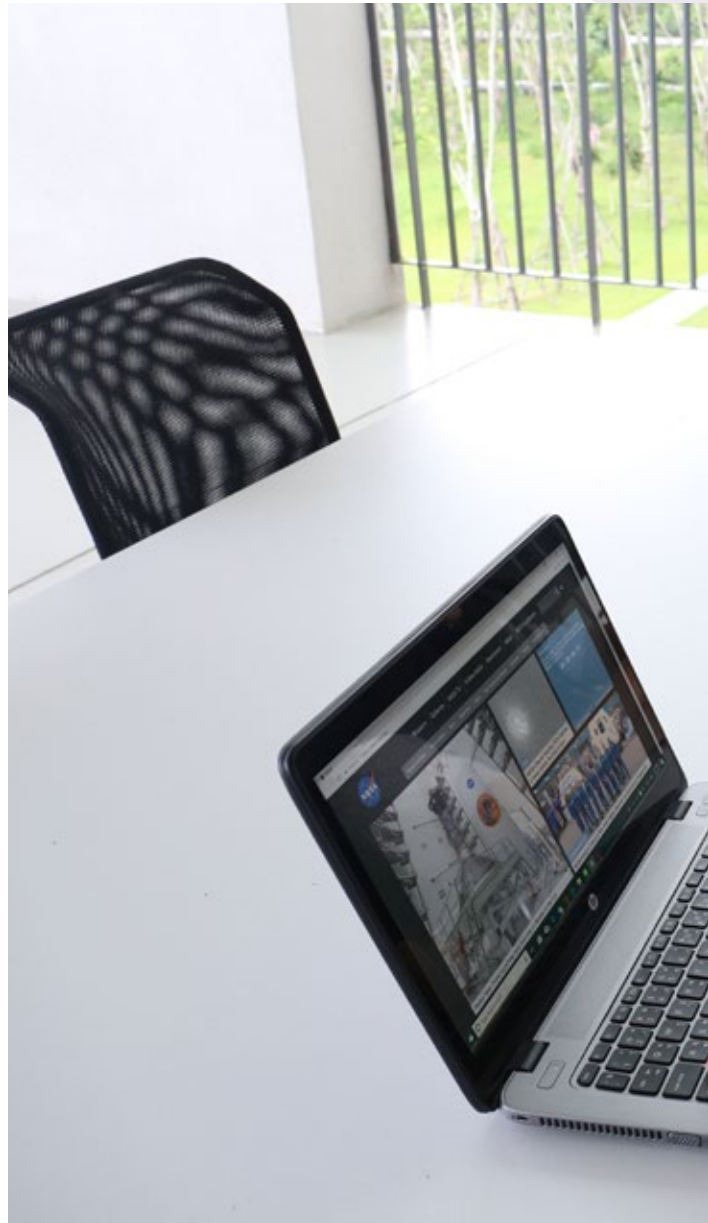


Campus ICT

To create a learning environment that encourages self-directed study and exploration, KVIS uses a network infrastructure of fiber optic cables to provide super-fast, 400: 400 Mbps internet access. Wi-Fi access is available at all KVIS campus buildings at all times. KVIS also provides personal laptops and/or desktop computers to both students and teachers for quick and easy access to the World Wide Web.

To facilitate the use of information and communications technology (ICT) during classes, KVIS set up an interactive projector system in every classroom. Interactive projectors connect teachers and students and help create dynamic and advanced learning environments.

To manage the school's tasks in modules that work together in one system, KVIS uses software provided by SAP SE. SAP Student Lifecycle Management is used to automate student records and lifecycles, and the SAP enterprise resource planning software controls budgeting, managerial accounting, financial accounting, and materials management with flexible monitoring and real-time reporting.





Academic Resource Center

Situated at the center of KVIS, the KVIS Academic Resource Center (ARC) is the KVIS community's hub of knowledge. The ARC is managed by knowledgeable and organized staff, who are available 12 hours per day to support student academic needs. The ARC facilitates 21st century learning through its innovative design, use of information technology, and connection to the VISTEC system.

The innovative design of the ARC creates a welcoming environment for all. To ensure that spaces for both individual and group learning exist, the ARC's learning spaces include quiet self-study areas, group study rooms, a multimedia room, and a spacious open reading area.

The KVIS ARC uses the Intelligent Library System. This system uses RFID (Radio Frequency Identification) and an OPAC (Online Public Access Catalog) to provide the maximum convenience and satisfaction possible to students and staff. To better facilitate access to materials, the ARC includes a self-checkout station, an automated book depository, and an online library catalog.

The ARC delivers thousands of books and journals from a wide variety of disciplines, to meet the academic needs of the KVIS community.





KVIS students and staff also have access to the electronic resources of the VISTEC Learning Center. This setup enables ARC users to access one of the most comprehensive online databases and one of the largest science and technology digital research collections in Thailand.



Student Health and KVIS Sports Complex

At KVIS, the students' physical health and safety is supported by 24-hour access to a nurse-staffed infirmary and campus guard stations. Students are also provided with regular health screenings. The students' emotional health is supported by a counseling team of trained psychologists. KVIS carefully manages student nutrition by providing three well-balanced meals per day. Recently, with the support of an expert nutrition team from Mahidol University, the KVIS Wai Sai, meaning "KVIS health and nutrition project," was launched.

Healthy bodies support healthy minds. To better encourage physical fitness and to provide avenues for socialization, KVIS students have access to a 1,200-square-metre indoor sports complex with an adjoining 1575-square-metre outdoor recreation area. The indoor facility features basketball hoops, badminton nets, multi-functional weight training machines, treadmills, stationary bicycles, and cross-training machines. The outdoor recreation area features exercise machines, a futsal field, a climbing wall, a volleyball court, and more.

Main School Building and Facilities

The main school building was planned in line with a student-centered philosophy that seeks to enhance creativity and stimulate students' enthusiasm to learn both inside and outside of the classroom. The main school building gives a sense of security and is fitted with facilities for both academic pursuits and student wellbeing. Every part of the main building was designed to be conducive to studying



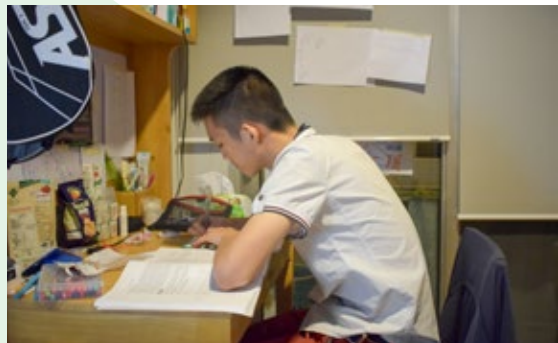
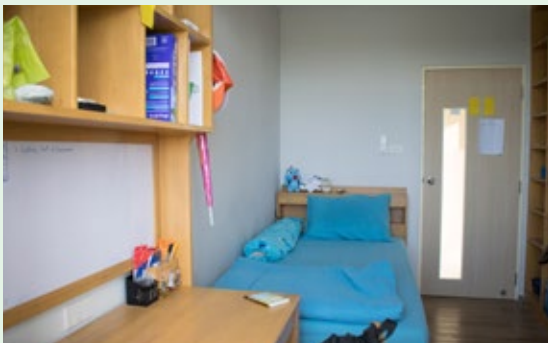
and intellectual growth. The building features classrooms and science laboratories, group study areas, outdoor learning spaces, an atrium, an auditorium, an art room, a Thai music and dance room, a general music room, and a range of engineering and computer workshops. The building overlooks a forested landscape with a lake where geese and fish can be found.





Student Halls of Residence

The student halls of residence were designed in line with the boarding school concept. The residence system aims to create an overall atmosphere of care and to enhance the students' relationships with one another. Residence hall teachers are provided with on-site living quarters, making them readily available and able to assist the students at all times.





KVIS Staff Housing

As KVIS is a boarding school located in a rural area, it is the school policy to encourage all KVIS teachers and staff to stay on campus. The school provides these employees with fully furnished two and three bedroom apartments, designed by professional interior designers. These apartments are surrounded by tropical gardens and have views of the KVIS lake and the surrounding mountains.





KVIS Public Contributions

KVIS Open House

This activity provides an opportunity to students who are interested in studying at KVIS. Visitors gain exposure to a diverse group of scientists working with state-of-the-art technologies. The visitors can also enjoy theoretical and hands-on learning in simulated KVIS classrooms.



Supporting School Development

Part of KVIS's founding mission is to serve a model for other STEM institutions and to help advance Thailand's overall education system. KVIS supports the nation's school system by inviting teachers from across Thailand to attend conferences and workshops free of charge. These conferences and workshops feature experts from around the world and provide customized expertise to fit the specific needs of local educators.





Student Community Service

KVIS strives to be an active member of the community around Wangchan Valley and to develop well-rounded adults who are compassionate, willing to help others, and able to transform this willingness into action. KVIS students thus serve the community with at least 80 hours of service before graduation. KVIS students are often seen helping teachers at local schools, and KVIS often hosts English and science camps for local children.





The KVIS ISF

The KVIS Invitational Science Fair (KVIS ISF) provides a platform for each KVIS graduating class to showcase their research projects through oral and poster presentations to like-minded students from local and international partner schools. The science fair promotes and atmosphere of scientific exchange, friendship, and collaboration among the students and teachers in attendance. The KVIS ISF happens every year. At the first KVIS ISF in 2018, KVIS hosted 87 visiting student participants from 35 schools in 11 countries.





Visitors

KVIS was proud to host visits by two former prime ministers of Thailand, Mr. Anand Punyarachun and Mr. Abhisit Vejjajiva, and was proud to host the current prime minister, General Prayuth Chan-ocha.





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