

Foundational Framework
UPH FACULTY OF SCIENCE AND TECHNOLOGY

The UPH Faculty of Science and Technology (FaST) is grounded in the theological framework and mission of UPH and the Pelita Harapan Educational Foundation. FaST seeks to deeply understand Mathematics, Science, Engineering and Technology in the light of the Holy Scriptures, the convictions of Reformed theology, and the preeminence of Jesus Christ in all things. The educational purpose commits to the principle that truth is revealed by God through Christ in Whom are hid all the treasures of wisdom and knowledge.

FaST aims to be a Faculty with the highest value in intellectuality, skill, life integrity, Christ-centered spirituality and in teaching, research and community services in the field of Mathematics, Science, Engineering and Technology.

Study, research, and every aspect of life give glory to Christ. This service enables the generation of knowledge, creative discoveries, and productive members of society to serve God by serving the nation, community, and the world through the synergy of departments, and excellent teaching and research in Mathematics, Science, Engineering and Technology.

FaST develops all parts of the body: students, graduates, faculties, and staffs. Students are developed in intellectuality, skill, life integrity, and Christ-centered spirituality, so that their study, research, and every aspect of life give glory to God. Faculties and staffs are enhanced in their capacities, capabilities and Christ-centered spirituality in every aspect of their ministry at UPH.

The Faculty leaderships are responsible in exploring the implications of God's glory in teaching and research, as well as encouragement of the integration of spirituality into the life of study, the life of the mind, and the understanding of academic disciplines.

Specifically this means that biblical, Reformed theology -- grounded in the Holy Scriptures, dependent on our sovereign and gracious God, and centered in the person and work of Jesus Christ -- is the starting-point, the guiding conviction, and

the ultimate evaluative framework for the UPH FaST. This theology is foundational and primary, such that, even as the program enables earnest and honest exploration of the vast array of sub-disciplines, theories, and practices, all teaching and scholarship will finally be governed by this theological understanding.

This theological understanding presupposes the fact that all human thinking is rooted in worldview. There is no such thing as religiously “neutral” or purely “objective” thought, and every theory or practice in Mathematics, Science, Engineering, and Technology gives evidence, explicitly or implicitly, of its underlying worldview. The framework articulated below is presented in the interest of transparency and accountability regarding the worldview that undergirds and motivates the study of Mathematics, Science, Engineering and Technology at UPH.

The UPH FaST is committed to the authority and sufficiency of the Holy Scriptures, which are the words of God written, and to the expression of the truth of the Scriptures in the tenets of Reformed theology. On this basis, the study of Mathematics, Science, Engineering and Technology at UPH is rooted in the conviction that each person is created in the image of God, but has fallen into sin and can only be completely restored through redemption in Christ

Recognizing the broad range of disciplines and sub-disciplines within the field of Mathematics, Science, Engineering and Technology, we recognize that the import and impact of this theological framework will vary somewhat across the disciplines and sub-disciplines. However, we also affirm that, as the theological framework addresses the most basic and pervasive foundations of all understanding, every discipline and sub-discipline will, in important ways, be framed and informed by our theological convictions.

Based on the theological framework of the YPPH/YUPH Statement of Faith, teaching of Mathematics, Science, Engineering and Technology in UPH is meant:

1. To develop graduates who are professional and mature, both spiritually and mentally, and able to play a role as professionals in their respective field who display Christian values in every aspect of their lives.
2. To develop graduates who have positive attitude towards creation.
3. To develop graduates who are critical towards the depravity of human kind.
4. To develop graduates who are creative as agents of God's redemptive purpose on earth.
5. To produce Mathematicians, Scientists, Engineers, and Technologists who are grounded professionally and personally in God's truth as revealed in Holy Scripture, and who depend totally on God's sovereignty and God's way in their life transformation. The ultimate aim is that they would become Christ-like themselves, leaning not on their own strength and self-sufficiency, but faithfully applying their biblically-grounded Mathematics, Science, Engineering and Technology knowledge for the good of others and for the glory of God.

A. Foundational Framework

Nature and the universe are governed by laws and orders. Some laws have been discovered by human through scientific investigations and experiments - they are presented in mathematical equations. Nevertheless, a lot of things remain as mystery and The Only One who knows the answers is The Designer & Creator Himself. Therefore sense of wonder of God through His creation is our spirit in Glorifying God.

We glorify God through our profession as Christian mathematicians, scientists, engineers and technologists by developing and promoting biblical Christian worldview on the nature, scope and limitations of science and technology on the dynamic interactions between science and faith.

B. Biblical Foundation

By faith we understand that the universe was found in God's commands so that what is seen was not made out of what was visible (Hebrew 11:3).

C. Key Principles

C1. Mathematics

Mathematical knowledge does not depend on experiments or observation. Mathematics helps us to understand the law of nature and universe. Also mathematics helps us to understand probability, so that even chaos and random events are governed by equations. Mathematical concepts such as infinity and absolute truth are consistent with the biblical faith of God and His work. Mathematics helps us to believe that the Law of The Lord is Perfect (Psalm 19:7-8).

C2. Science

There is only one truth, the absolute truth that both science and Christianity are pursuing. Therefore science and faith go hand in hand. Science tells us about how the universe works, Christianity tells us about the meaning and purpose (why). Those two questions may be asked simultaneously of what is happening and often both must be addressed if an adequate understanding is to be attained. These two forms of searching for truth are complementary to each other, when we believe that the universe is created by God, from nothing into something.

“The heavens declare the Glory of God” (Psalm 19:1) is the verse that underlines all teaching and research in FaST.

C3. Engineering

Technology must be developed, and used with a responsible attitude towards God. In the hands of Christian technologists, technology is a mandatory tool for taking care of God's creation, including fellow human being. God created man in his own image, and gave us command to look after the earth and be good stewards to the earth (Genesis 1:28 – 30).

C4. Technology (Food Technology)

Students will be developed to be strong in basic knowledge of Food Science and technology, reliable, creative and innovative in applying the principle of Food Science and Technology and designing the process to produce high quality and safe food for mankind always aimed for cultivating, restore and re-oriented the nature as God's initial plan.

Graduates of this program should be having high integrity based on Christian ethics; leaning not on their own strength and self-sufficiency, but faithfully applying the knowledge for giving positive contribution to society and witnessing God's works; and having critical mindset enabling to uphold the norms in all situations.

Students will be developed as well in organizational skills, having planning ability and prioritization, analytical skills, multitasking skills, communication skills, problem solving skills, decision making skills, people skills (communication), team work skills to fulfill the cultural mandate to conquering, restoring and conserving the creation through their professional life.

D. Key Diagnostic Question

The beginning of a scientific wisdom is an informed and respectful recognition of its limit in answering questions such as "How did everything begin?"; "What are we here for?"; "What is the point of living?". Answers to these questions are found

in Christian Faith. God gives us the ability and excitements to explore His Creation, to find answers to the “How?”. When our explorations on the universe are based on the Biblical Worldview that God is the Creator and Sustainer of the Universe, the more we discover the more we got amazed by thinking about God.

E. UPH FaST Graduate Profile

E1. Key Principles

1. To develop graduates who are professional and mature, both spiritually and mentally, and able to play a role as professionals in their respective field who display Christian values in every aspect of their lives.
2. To develop graduates who have positive attitude towards creation.
3. To develop graduates who are critical towards the depravity of human kind.
4. To develop graduates who are creative as agents of God’s redemptive purpose on earth.
5. To produce Mathematicians, Scientists, Engineers, and Technologists who are grounded professionally and personally in God’s truth as revealed in Holy Scripture, and who depend totally on God’s sovereignty and God’s way in their life transformation. The ultimate aim is that they would become Christ-like themselves, leaning not on their own strength and self-sufficiency, but faithfully applying their biblically-grounded Mathematics, Science, Engineering and Technology knowledge for the good of others and for the glory of God.

E2. Graduate Profiles

1. Professional and mature

- Knowing God and His will.
(Mengenai Allah dan kehendakNya)
- Trust and obey God the Creator and His Truth.
(Percaya dan taat kepada Tuhan sang pencipta dan kebenaranNya)

- Transformation of self in accordance with God's Truth.
(*Berubah secara mandiri berdasarkan kebenaran*)
- Impacting the community and life.
(*Berdampak kepada komunitas dan kehidupan*)
- Give positive contributions to the society and environment.
(*Mampu memberikan kontribusi positif kepada lingkungan*)

2. Positive attitude towards creation.

- Understand that the creation is classified as: (1) human – man and woman, (2) living organism, and (3) non living matter.
(*Memahami ciptaan yang terdiri dari: manusia, makhluk hidup lain dan benda mati*)
- Know the essential differences between each type of creation.
(*Mengerti perbedaan esensi antara ketiga jenis ciptaan tersebut*)
- Treat each creation in accordance to each essence.
(*Memperlakukan masing-masing ciptaan sesuai dengan esensinya*).
- Appreciate human as the highest creation (was made in the image of God), who are the mediators of God's grace and presence for the other creations.
(*Menghargai manusia sebagai ciptaan tertinggi yang merupakan mediator berkat dan kehadiran Allah bagi ciptaan lainnya – Imago Dei*)
- As the highest creation, God gives human a mandate and authority to have dominion, as God's stewards, over all other creations - Genesis 1:26-28.
(*Sebagai ciptaan tertinggi manusia mengelola segala ciptaan lainnya atas mandat dan otoritas dari Allah – Kejadian 1:26-28*)

3. Critical towards the depravity of human kind.

- Understand that human has sinned before God
(*Menyadari keberadaan manusia yang berdosa di hadapan Allah*)
- Analyze all things critically in the light of God's word as the highest norm.

(Menganalisa segala sesuatu secara kritis dalam perspektif Firman Tuhan sebagai norma tertinggi)

4. Creative as agents of God's redemptive purpose on earth.

- Becoming good stewards of God in administering, redeeming, and returning the harmony between creations in the light of God's norms.
(Menjadi penatalayan yang baik dengan mengelola, memulihkan, dan mengembalikan keharmonisan ciptaan berdasarkan norma Allah)
- Witnessing God's work through professional life and service in the field of study or profession.
(Menyaksikan karya Allah melalui kehidupan pelayanan/profesional sesuai dengan bidang yang ditekuni)

5. Faithfully applying their biblically-grounded Mathematics, Science, Engineering and Technology knowledge for the good of others and for the glory of God.

- Know and develop the talents that are given by God.
(Mengenal dan mengembangkan talenta yang dipercayakan Tuhan)
- Work on God's cultural mandate through the professional life.
(Menggenapi mandat Allah untuk menaklukkan, menguasai, melayani dan memelihara ciptaan (=budaya) melalui kehidupan profesional yang ditekuni)

F. References

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