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VISION AND PLANS for CEAT, UPLB
2021-2026

The College of Engineering and Agro-industrial Technology (CEAT) envisions itself to be a premier institution of higher learning in engineering education, a center of excellence in engineering instruction, research and extension and a leader in the generation and promotion of technologies committed to progressive transformation and global relevance of Philippine Agriculture and Industry.

The current pandemic has indirectly changed the landscape of higher education in the country. I envision CEAT in the next 3-6 years offering relevant and innovative curricular programs and conducting research and extension activities that would offer engineering solutions to the current and future challenges of energy, agriculture and food security, climate change and the environment. *The delivery of our services to our stakeholders must also be adaptive to the disruptions from natural calamities and restrictions in mobility, health and safety concerns brought by the global pandemic.*

For the next 3-6 years, it is expected that the delivery of courses will be a mix of face-to-face, virtual and experiential learning using 21st century modes of learning that are problem-based and competence-based. CEAT must be ready to provide programs to produce the desired competencies of its graduates based on what the industry needs.

Internationalization has become an integral part of engineering education in the 21st century, as it promotes innovation in teaching and provides more opportunities for research. With the ASEAN Economic Cooperation of 2015, Philippine universities are being challenged today to produce graduates who can compete in the global market and undertake researches that can address the needs of their communities. Internationalization efforts at the college level must be undertaken including research collaborations with foreign universities and student exchange programs of both graduate and undergraduate students. This also includes assessment and accreditation of engineering degree programs by external accreditation system like AUNQA to ensure that these programs adhere to international academic standards and are at par with its counterparts in other ASEAN universities.

In pursuing these plans for CEAT for the advancement of engineering education and RDE, we will be guided by the UP core values of **honor and excellence with compassion**. CEAT administration under my leadership will implement these

programs with collegiality, accountability and transparency. With the help and support from our faculty, staff, students, alumni, industry & government partners and UP administrators, we will approach the new challenges brought by this pandemic as **one team - #OneCEAT**.

STRATEGIC PLANS

LIFE-LONG LEARNING AND INSTRUCTION

As a result of global pandemic, the University is expecting that the next normal will involve paradigm shift from education to learning and life-long learning; from knowledge-based to competence-based instruction; from input-based to learning outcomes-based education; and from teacher-dependent to guided independent learning.

While the University has experienced offering courses remotely for AY 2020-2021, monitoring and review of this remote learning experience need to be done. Review of course packs developed must be done regularly. Policies and guidelines on the improvement of the delivery of remote learning must be based on data analytics. Data may be provided by the College Secretary's Office for this purpose. Support must be given to faculty, staff and students through capacity building on remote learning and providing them with robust internet connectivity, e-learning resources and hardware and software support.

One way of bringing experiential learning to our students is through forging stronger links with the industry through the College Academe-Industry linkage Program. This can be realized through incorporating industry-based projects into the curriculum through the Engineering Industry Research and Internship Courses. Alumni mentoring system in industry setting will also be explored.

The online delivery of courses gives us an opportunity to be creative and to explore new ways of delivering programs and courses and to institutionalize innovations that enhance learning. For instance, joint offering of graduate courses between ERDT consortium universities particularly with UPD may be explored; joint course offering of undergraduate courses in BSABE & BSChE with UP Mindanao & UP Visayas, respectively. Senior-junior mentoring program must be strengthened and invitations of visiting professors, industry practitioners and alumni to interact with students in virtual class sessions will be done.

CEAT will also explore multidisciplinary offering of courses to provide students the flexibility and wider range of perspectives. In the pipeline is the proposal for the

offering of a Professional Masters in Food Engineering, in collaboration with the College of Agriculture and Food Science (CAFS). Offering of BS Materials Engineering in collaboration with CFNR and CAS which have the facilities and expertise in this area will also be explored.

The implementation of the CEAT Innovationeering program in the near future also hopes to develop a culture of innovationeering (the term was coined by Dr. Roger Billings and Sir Geoffrey Pardoe of the International Academy of Science, which means *“the science of putting science into work”*.) within the college. The creation of the UPLB SIBOL Fabrication Laboratory , a joint collaboration between the Department of Trade and Industry (DTI), UPLB Technology Transfer and Business Development Office (TTBDO) and CEAT will provide faculty, students and staff an environment where they can be creative and can avail of rapid prototyping services and computer modeling.

To ensure the continuous quality improvement of our undergraduate and graduate programs, self-assessment as well as internal and external quality assurance assessment must be done regularly.

SHORT TERM PLANS (2021-2023):

- Strengthen the graduate curricular programs of the college (revision of the existing graduate programs (MSAE, MS Agromet, PhD AE (regular and by Research), MSChE) and institution of new graduate programs (MSCE and PhD ChE by Research)
- Joint offering of Professional Masters in Food Engineering with CAFS
- Quality Assurance and Continuous Quality Improvement(CQI) of 4-year curriculum programs through internal and external assessments (UPLB /UPD AUNQA assessors) (BSCE,BSEE and BSIE) and accreditation to ABET or Washington Accord (BSABE)
- Adoption of the 21st century teaching strategies and pedagogy
- Establishment of mentoring system (junior& senior faculty)
- Provide more scholarships for underprivileged students in collaboration with UPAE & UPLB CEAT-AA
- Establishment of ME Department
- Enhance Industry Academe Linkage to support the implementation of the Engineering Industry Research and Internship
- Recruitment of the” best and the brightest” faculty and enhance faculty development plan of the unit to complement the teaching and research thrust of the college
- Establishment of a working Fabrication Laboratory

LONG TERM PLANS (2021-2026):

- Offering of Multidisciplinary programs with other colleges will be explored (BS Materials Engineering with CAS & CFNR, MS Sustainable Energy with CEM & CFNR, MS Environmental Engineering with SESAM)
- AUN QA Certification & Accreditation in Washington Accord of undergraduate engineering programs (BSCE, BSChE)
- Implementation of Innovationeering Program in collaboration with UPLB TTBDO to build an innovationeering ecosystem mindset within the college

RESEARCH AND EXTENSION

While we are looking for engineering solutions to problems in agriculture and industry, we understand that the best way to approach these problems is through collaborative and multidisciplinary approach with other non-engineering fields. Encouraging collaborative, interdisciplinary & multidisciplinary research and teaching with other colleges in UPLB is the way to go forward.

The Center for Agri-Fisheries and Biosystems Mechanization (BIOMECH) will continue in its mandate of addressing the problems in the agricultural and fisheries mechanization sector and to lead and coordinate the agricultural and fishery mechanization RDE program of all academic institutions in the country. The Center will continue to offer innovations through smart farming technologies for a sustainable and productive farming system and expand its RDE thrust on food security, environmental protection, energy sustainability, and climate change, towards Agriculture 4.0. This will be done through partnerships and collaboration with academe, government agencies, non-government agencies, farmer-groups and other beneficiaries/ clientele, and counterparts. BIOMECH will continue to serve as the research arm of the college providing in-house funds for faculty, staff and students in conducting research within the thrust of the center.

The Agricultural and Machinery Testing Center (AMTEC) being an official national testing agency will continue in its mandate of ensuring the production and distribution of high quality agricultural and fisheries machinery appropriate to local farming conditions. It will continue to assist the Bureau of Agriculture and Fisheries Standard (BAFS) in the establishment of standard specifications, test procedures and performance indices for agricultural machinery; to conduct test and evaluation of agricultural machinery; to publish and disseminate test standards and test results and to provide technical assistance in the establishment and operation of the testing centers in the country. While it performs its public service functions, it will also assist the College in instruction by providing an access to its laboratory and staff expertise. To ensure the continuity of its operation as the

national testing center for agricultural machinery, the UP BOR approval for the institutionalization of AMTEC under CEAT UPLB will be sought.

CEAT Philippine Journal of Agricultural and Biosystems Engineering (PJABE) being funded by BIOMECH is now applying for Clarivate Analytics Web of Science. This move is to provide a venue for a wider dissemination of information on recent research, development, and extension outputs in the field of agricultural and biosystems engineering. To facilitate its day-to-day business transaction, there's a need to enhance/increase its administrative support for a more efficient and effective operation.

SHORT TERM PLANS (2021-2023):

- Senior-junior Mentoring system within research clusters of CEAT
- BIOMECH as research arm of the college providing in-house funds for engineers, researches and faculty
- Expand the role of AMTEC in providing assistance to instruction by providing access to its laboratories and staff expertise
- Capacity building for faculty and staff in the conduct of research and in the publication of research outputs
- Application of patents of technologies developed by CEAT
- Support the application of PJABE to international Clarivate analytics Web of Science and its day-to-day operation
- Enhance local and international exposure of faculty, staff and students through publication and research dissemination grants
- Explore additional funding for publication and research dissemination grants from government agencies such as CHED and DA-BAR other than that provided by DOST-ERDT and UP system
- Participation of students, faculty and staff in local and international academic competitions (quiz bees, design contests, etc)
- Promote internationalization thru research collaborations with foreign universities and student exchange programs of graduate students through ERDT Sandwich Program grant
- Encourage PhD graduates to pursue post doc studies in foreign universities

LONG TERM PLANS (2021-2026):

- Innovative RDE programs of BIOMECH to provide solutions to the problems in the agricultural and fisheries mechanization sector and adoption by the government institutions of the policies developed by BIOMECH
- Institutionalization of AMTEC under CEAT UPLB for BOR Approval

- Marketing of CEAT expertise to provide innovations and solutions to problems in agriculture, energy, climate change and the environment to local and international funding agencies that would support the infrastructure projects (laboratories and equipment) of the college
- Interdisciplinary & Multidisciplinary research programs in the following areas:
 - Food engineering with CAFS
 - Technopreneurship with CEM
 - Environmental engineering with SESAM
 - Alternative/Sustainable energy with CEM, CFNR
 - Materials engineering with CAS, CFNR
 - Biomechanical engineering with CVM
 - Electronics and Communications engineering with CAS
 - Engineering education with CDC, CAS
- Development of Sustainable Energy Options for UPLB in collaboration with TTBDO
 - Development of sustainable energy projects that will lead to substantial decrease in energy consumption for UPLB
 - Development of a sustainable energy technology park
 - Demonstration projects of sustainable energy technology for students, faculty and researchers
 - Industry academe partnership in sustainable energy

FACULTY, STAFF AND STUDENTS WELFARE

For efficient delivery of our programs, CEAT faculty and staff must be equipped with the technical and entrepreneurial skills to enhance the support given to students and other stakeholders. Junior faculty will be supported in obtaining their PhD degrees through DOST-ERDT Faculty Development Program (PhD abroad) Grant and other available scholarships. Faculty and staff will undergo capacity building through the conduct of trainings and workshops and attendance to specialized trainings to strengthen their skills and to allow them to grow and thrive in the academia. REPS and Administrative Staff will also be supported in their pursuit of post-graduate degrees.

The welfare of our students will be one of the primary concerns of the college administration. We will be more compassionate with our students especially in these challenging times. CEAT students will be provided with a conducive environment where their creativity and productivity will be enhanced. They will be given opportunities to express their opinions about the programs and services of the college. To immediately address the issues and concerns of the students,

the College Student Council (CSC) Chair will continue to be a member of the CEAT Executive Committee. As such, CSC will actively participate in the deliberations during decision-making, especially on student concerns. Hence, consultative meetings with the students will also be done to ensure that the plans of the college are aligned with the students' needs. To support more underprivileged CEAT students, scholarship programs being offered by the UPLB CEAT AA and UP Alumni Engineers will be expanded. Alumni and private organizations engagement will be pursued to support this endeavor.

To develop the overall physical wellbeing of CEAT constituents, especially in a work-from-home set-up, health and wellness program for faculty, staff and students will be initiated by the Health and Wellness Committee of the college. Establishment of an Emergency Loan Fund for Faculty & Staff for their Medical Expense through the support of the UPLB CEAT AA will be done.

SHORT TERM PLANS (2021-2023):

- Health and wellness program for faculty, staff, and students
- Establishment of an Emergency Loan Fund for Faculty & Staff for their Medical Expense
- Student Hub for group discussion
- Support Junior Faculty in obtaining their PhD degrees through DOST-ERDT Support
- Support Administrative Staff trainings and pursuit of Post-Graduate Degrees
- Support paper presentations and publications in ISI journals of faculty through DOST-ERDT Faculty Research Dissemination grant & Publication grant and other available grants from government agencies
- Explore more scholarship grants from different international organizations and governments for students, faculty and staff

LONG TERM PLAN (2021-2026):

- Robust Faculty development plan to support teaching and RDE thrust of the college

INFRASTRUCTURE

- Construction of the new ME Building, 2nd phase of EE Building, ChE building, BIOMECH building & AMTEC Building,
- Program resource for online delivery of courses