



MASTER PROGRAM IN BIOTECHNOLOGY AND FOOD TECHNOLOGY

Department of Bioengineering
Faculty of Engineering
Royal University of Phnom Penh

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BACKGROUND

The Master Program in Biotechnology and Food Technology (MSBF) under department of bioengineering (DBE), Royal University of Phnom Penh (RUPP), intends to prepare engineers for life-long achievement through both education in Biotechnology, Food technology, and sustainable refining of natural products in Cambodia and also development of communication, teamwork, leadership and entrepreneurship skills. The approach chosen is to establish a master education in order to partly solve the immediate needs for professionals as well as addressing the long-term internal needs of expansion of the research and educational capacity of the faculty of engineering in these areas. The study medium is in English language. The curriculum of master program is initiated, developed, and taught by 3 universities staffs - Umeå University (UmU), Lund University (LU) and the Swedish University of Agriculture (SLU).

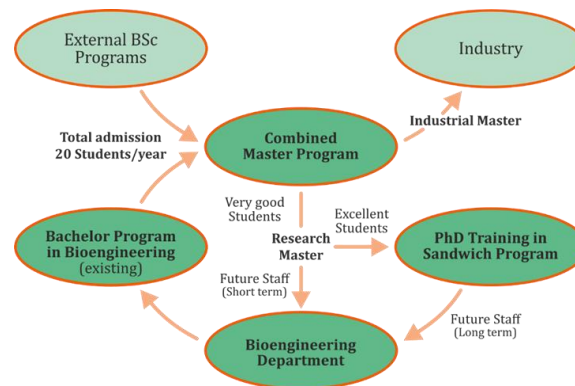


Fig 1. Strategy for choosing, selectively training, and retained the best students as staff.

PROGRAM SELECTIONS

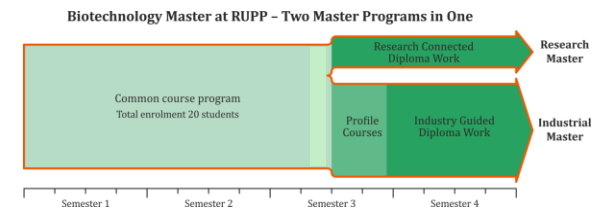


Fig 2. Structure of the combined Research and Industry Master Programs

With current availability at MSc level, programs should follow the same course package for the first 2½ semesters, after which the best students – based on their overall score – will be offered a possibility to continue on the “**Research Master**” for outstanding students who continue directly their thesis work after 2½ semester, where they will be offered projects and supervision by faculty member at RUPP, while the remaining will be offered an “**Industrial Master**” for student who outstanding student who would like to conduct their research project under the supervision of BE faculty members.

“MBFT will be offered to the crème de la crème of domestic students, based purely on academic merit”



COURSE PACKAGE

The course package we intend to implement in the Bioengineering MSc program at RUPP, with the assistance of Umeå University (UmU), Lund University (LU) and the Swedish University of Agriculture (SLU). Course credits are provided in the UMAP Credit Transfer System (UCTS) system, where the conversion factor used is 5 ECTS = 3 UCTS. Total Credit of 64 UCTS.

S.	Research Master	Credit
1	Instrumental Analysis	4
	Applied and Multivariate Statistics	4
	Surface and Colloid Chemistry	4
	Cell and Organism Metabolism	4
2	Bioinformatics	4
	Techniques in Biotechnology	4
	Industrial Biotechnology	4
	Sustainable Bioprocess Engineering	4
3	Fermentation Technology	4
	Plant Biochemistry/Molecular Biology	4
	Food Science and Microbiology*	4
	Advance food technology*	4
4	Thesis Work	16

* For Industrial Master Track

REQUIREMENTS

- Must hold bachelor in Chemistry, Bioengineering, Biotechnology, Food Engineering, Biochemistry, Biology, Agro-industry, or Food Technology
- 1 Complete application form
- 1 Personal statement (In English)
- 1 Resume (Max. 2pages)
- 1 Verified Copy of Bachelor degree and transcript
- TOEFL (500) or IELTS (5.5) or equivalent

RESEARCH PROJECTS

DBE conducts 4 research projects under Higher Education Improvement Project (HEIP-WB) for the period 3 year (2021-2024) in total budget of 1.3 million USD

	Projects name
1	Growth optimization of <i>Haematococcus pluvialis</i> for astaxanthin and algal powder supplements (Dr. Hangsak Huy)
2	Analyzing bioactive compounds of marine algae in developing of moisturizing, hypermimentation, and anti-aging cosmeceutical cream (Dr. Solida Long)
3	Development of probiotic fermented vegetables in Cambodia and their effect on immunue system <i>in vitro</i> (Ms. Houy Laingsunh)
4	Watermelon variety improvement through conventional breeding and tissue culture (Dr. Phat Phanna)

SCHOLARSHIP

10 students will be award 100% scholarship under support of Swedish International Development Agency (SIDA). The scholarship includes tuition fee 1,200 USD and salary of 200 USD per month. Scholarship students will work on one of above research projects under supervision of local supervisor. Students will be required to work full time in laboratory and follow the TOR of each supervisor.

TUITION FEE: 1,200 USD

INFRASTRUCTURES

All equipment/instruments equipped in each laboratory are funded by SIDA and HIEP-WB projects to RUPP.

Full faculty member	8
Adjunct lectures (International)	12
Instruments	
• Microbiology and genetics lab	13
• Pathogenic microorganism lab	4
• Food development and analysis lab	10
• Analysis and characterization lab	5
• Plant biotechnology lab	5
• Protein lab	7
• Bio-processing lab	7
• Cosmetic lab	11
• Food processing lab	9

JOB OPPORTUNITIES

The Department provides its graduates a competitive edge in the labor market. We prepare high quality professionals to work as food and agro-industry specialist, biomolecular engineer, biomaterial engineer, biomedical scientist and lab technician, biotechnology and food entrepreneur, and lecturer/researcher in the field.

IMPORTANT DATES

Dateline application submission:

15th October, 2021

Entrance Exam: 25th October, 2021

Academic start: 16th November, 2021

