



Kum-Kum Bhavnani
Telephone: (510) 987-9303
Email: kum-kum.bhavnani@ucop.edu

*Chair of the Assembly of the Academic Senate
Faculty Representative to the Regents
University of California
1111 Franklin Street, 12th Floor
Oakland, California 94607-5200*

July 22, 2020

MICHAEL T. BROWN
PROVOST AND EXECUTIVE VICE PRESIDENT
UNIVERSITY OF CALIFORNIA

Re: Approval of Master of Development Engineering (MDE) at UCB

Dear Michael,

In accordance with the *Universitywide Review Processes For Academic Programs, Units, and Research Units* (the "Compendium"), and on the recommendation of CCGA, the Academic Council has approved UC Berkeley's proposal to establish a Master of Development Engineering self-supporting graduate and professional degree program (SSGPDP).

Because this is a new degree title, and the Assembly of the Academic Senate is not meeting within 30 days of CCGA's approval, Council must approve the program per Senate Bylaw 125.B.7.

I am enclosing CCGA's report on its review of the new program, and respectfully request that your office complete the process of obtaining the President's approval.

Please do not hesitate to contact me if you have additional questions.

Sincerely,

A handwritten signature in cursive script that reads "Kum-Kum Bhavnani".

Kum-Kum Bhavnani, Chair
Academic Council

cc: Academic Council
UCB Senate Director Banaria
IRAP Analyst Procello
CCGA Analyst Harms



COORDINATING COMMITTEE ON GRADUATE AFFAIRS (CCGA)

Ramesh Balasubramaniam, Chair
ramesh@ucmerced.edu

ACADEMIC SENATE

University of California
1111 Franklin Street, 12th Floor
Oakland, California 94607-5200

June 26, 2020

ACADEMIC COUNCIL CHAIR KUM-KUM BHAVNANI

Dear Chair Bhavnani,

At its June 3 meeting, the Coordinating Committee on Graduate Affairs (CCGA) voted 10-0-2 to approve a proposal for a Master of Development Engineering on the Berkeley campus.

Development Engineering is a new interdisciplinary field to address the challenges posed by the United Nations Sustainable Development Goals. The field integrates engineering, economics, business, natural resource development, and social sciences to develop, implement, and evaluate new technological interventions that address the needs of low-income communities around the world. The goal of the Development Engineering field is to broaden the potential applications of engineering to address 21st century inequities.

The program reflects the demand for diverse STEM professionals who can invent, adapt, or implement technologies to benefit communities in need. The program will foster “T-shaped” professionals who have a broad base of general skills as well as deep knowledge in one area. The broad skills include the design and management of technology, knowledge of emerging technologies, evidence-based assessment techniques, economic development, and community engagement. The program’s curriculum enables students to further their expertise in one of the following four predefined areas: 1) data analytics for social impact; 2) energy and water systems and the environment; 3) sustainable design innovations; or 4) healthcare transformations.

UCB has current academic programs in development engineering, including a PhD, a graduate concentration open to graduate students across fields, and an undergraduate minor. The proposed Masters program is a logical addition, and, in building on these other programs, benefits from established courses, a distinguished faculty, and a large number of related disciplinary activities and connections. The curriculum appears to be comprehensive and ambitious. Reviewers believe that the program has both high quality and academic rigor.

CCGA recommends approval of this proposal. I submit this for your review and have enclosed my report as Lead Reviewer. Please do not hesitate to contact me if you have further questions regarding the proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Balasubramaniam', with a long horizontal flourish extending to the right.

Ramesh Balasubramaniam
Chair, Coordinating Committee on Graduate Affairs (CCGA)

cc: Mary Gauvain, Academic Council Vice Chair
CCGA Members
Hilary Baxter, Academic Senate Executive Director
Michael LaBriola, Academic Senate Assistant Director
Chris Procello, Academic Planning and Research Analyst
Lisa García Bedolla, UC Berkeley Graduate Dean
Jocelyn Surla Banaria, UCB Senate Executive Director
Sumei Quiggle, UCB Senate Associate Director

Enclosures (1)

June 25, 2020

TO CCGA

FROM LINDA R. COHEN (LEAD REVIEWER)

Proposal from UCB Graduate Group in Development Engineering to establish for a Master of Development Engineering Degree (SSPGDP)

This report was written after discussion at CCGA and reflects the views of subject area experts from the University of California. UCPB also provided a detailed analysis of the proposal. The proposal is endorsed by the UCB Divisional Council of the Academic Senate and the UCB Graduate Council, and includes letters of support from relevant deans, chairs and administrators at UCB and other UC campuses. Due to the exceptional circumstances related to the coronavirus crisis, CCGA has no additional formal external reviews; however, given the range of comments and positive assessment by ourselves and all reviewers we determined that CCGA could proceed with endorsing the proposal.

Introduction

Development Engineering (DevEng) is a new, interdisciplinary field that integrates engineering and technology with economics, public health and other social sciences to analyze problems whose solution requires knowledge of the societal or ecological context. Integrating aspects of development economics with engineering, the field responds to the UN Sustainable Development Goals. UC Berkeley, with programs and faculty from across campus who participate in the Graduate Group in Development Engineering, the Blum Center for Development Economics as well as related activities in the College of Natural Resources, Public Health and elsewhere, is a leader in the field. The proposed degree is a Plan II masters, SSPGDP, with 3 semesters of coursework, a summer internship, capstone project and oral examination. In addition to core classes, students would specialize with additional coursework and a capstone project in areas including data analytics, energy and water, health care transformation, or sustainable design, with the further option of a student self-designed specialty. The program is aimed at early or mid-career professionals with a STEM or quant background and contemplates an initial class of 35, growing to 45 per entering cohort.

Evaluation

Quality and Academic Rigor

UCB has current academic programs in development engineering, including a PhD, a graduate concentration open to graduate students across fields, and an undergraduate minor. The proposed Masters program is a logical addition, and, in building on these other programs, benefits from established courses, a distinguished faculty, and a large number of related disciplinary activities and connections. The curriculum appears to be comprehensive and ambitious. Reviewers believe that the program has both high quality and academic rigor.

Adequacy of Program Administration

The MDevEng program will be administered by the Blum Center for Development Economics. An area of concern, also investigated by the UCB Graduate Council, is the long-term stability of locating an academic program outside a College or School and the potential problems for faculty (particularly

untentured faculty) hired by a College whose teaching and research activities are largely within the program.

The Blum Center has significant advantages for the program: it administers other activities associated with development, has the capacity and contacts to arrange the critical summer internships for students, and serves as a locus for faculty across campus. Because the program is fundamentally interdisciplinary, and additionally due to the substantial experience of the Blum Center, this administrative arrangement appears appropriate.

Effect of Program on existing Programs

This program is unique at the University of California due to the technology/social science focus (other development and public policy masters' programs do not center on technology; related engineering programs do not focus on development issues) and the scope of applications (distinguishing the program from offerings in the College of Natural Resources and other environmental/ecology programs at the University of California). The program should compliment related programs in public policy, business, natural resources and economics.

The proposal anticipates students enrolling in courses across campus to fulfill the specialization component of the program. Proposers have established capacity for students in potential courses and proposed an attractive financial arrangement. Through these arrangements, the MDevEng may also contribute to other programs on campus. Leadership in these programs have written in strong support of the MEngDev proposal.

Adequacy of the Diversity Proposal

Proposers anticipate that the pool of applicants for the program will be diverse, that the resulting graduates of the program will contribute to diversity in the higher levels of public organizations involved in economic development. As has been the case with other Development Engineering initiatives at UCB (evidence supplied in the proposal), both the diversity focus and composition of the student body in the program are expected contribute to diversity goals in faculty hiring and retention in the UCB College of Engineering. We concur in each of these assessments.

The proposal identifies 2 specific initiatives to support the diversity goals: first, that it will, within 5 years, develop an equity and inclusion plan in line with the College of Engineering plan for recruitment and retention of underrepresented minority students and lecturers. Second, the proposal includes a workshop series to be conducted jointly with industry partners aimed that enhancing the success of all students, but with a particular focus on issues of URM participants.

Proposers have considered and addressed issues of diversity and inclusion, and have incorporated a reasonable strategy to support the goals of the University. The success of the program on this dimension will need to be evaluated in subsequent reviews.

UCPB Evaluation

The UCPB evaluation is generally positive. The evaluation notes that due to the unique nature of the proposal, the revenue projections and job placements are uncertain. UCPB and the UCB Graduate Council also explored the financial ramifications of locating the program in the Blum Center for

Development Economics. These issues are reasonable addressed in the proposal and accompanying letter from the proposers.

Conclusion

I recommend endorsing the proposal. Future reviews should pay particular attention to (1) whether problems arise from locating the program outside an established College or School; (2) the continued success of Development Engineering in contributing to diversity and inclusion; and (3) whether demand for the program and job placements support initial projections.