

# Information Communications Technology for Development (ICTD)

Information and communication technologies (ICT) have contributed to dramatic improvements in the productivity of businesses in advanced economies; they have expanded access to information of all sorts, empowered citizens and communities, and helped to strengthen governance.

These technologies can be employed to address problems in the developing world as well, where a large proportion of the population lives in poverty and without access to adequate food, nutritional information, education, health care, credit, and other social and economic opportunities.

The Information and Communication Technologies and Development certificate program equips students to work across boundaries to identify, evaluate, and implement solutions to pressing societal problems in the developing world.

The program has three broad components:

- Understanding processes of technology diffusion and adoption in developing regions.
- Acting through the design and deployment of information systems in close collaboration with the communities they are meant to support.
- Redefining the dialogue about the role of technology in the global economic and political processes that affect developing regions.

The Graduate Certificate in Information and Communication Technologies and Development is issued by the School of Information but is open to all UC Berkeley graduate students. The certificate is in addition to a student's regular degree program and is designed to complement a wide range of existing degree programs. Upon graduation, you will be issued a certificate in addition to your diploma, and completion of the certificate program will be noted on your official transcript.

Applicants must already be registered UC Berkeley graduate students, in any school or college. Applicants must be in good academic standing (3.0 minimum GPA and making good academic progress). Admission requires the approval of the student's primary advisor in their home department. To apply to the certificate program, students should complete the Admission Application Form (<https://www.ischool.berkeley.edu/programs/ictd/#admission-application>) and submit it to [ictd-certificate@ischool.berkeley.edu](mailto:ictd-certificate@ischool.berkeley.edu). Students may apply at any time from the beginning of their enrollment in a Berkeley graduate degree program until graduation. We encourage you to apply early; students who have already been admitted to the certificate program will be given enrollment priority for the required course INFO 283.

The Graduate Certificate in ICTD requires both coursework and fieldwork. The Certificate Completion Form ([https://www.ischool.berkeley.edu/files/ictd\\_cert\\_completion\\_form.pdf](https://www.ischool.berkeley.edu/files/ictd_cert_completion_form.pdf)) must be

submitted by the last day of instruction of the student's final semester, after the completion of all certificate requirements.

## Coursework

At least nine units of approved graduate-level or upper-division undergraduate ICTD courses, with a grade of B or higher, including:

- Information and Communications Technology for Development (INFO 283) (3 units)
- One course in social sciences methods from the approved list (3 units)
- Additional ICTD elective(s) from approved list (2 units)
- INFO 290 Special Topics in Information (1 Unit)

## Introductory Course

INFO 283	Information and Communications Technology for Development	3
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## Social Science Methods

Choose one course from this list.

A,RESEC/PUB POL C253	International Economic Development Policy	3
DEVP 229	Quantitative Methods and Impact Evaluation	3
DEVP 237	Leadership, Conflict Resolution, and Community Development	3
ENE,RES 273	Research Methods in Social Sciences	3
INFO 214	User Experience Research	3
INFO 272	Qualitative Research Methods for Information Systems and Management	3
INFO 287	Course Not Available	

## ADDITIONAL ELECTIVES

### Development Policy

A,RESEC 213	Applied Econometrics	4
A,RESEC C253	International Economic Development Policy	3
DEVP 233	Law, Politics, and Policymaking	3
POL SCI 202A	Theories of Development and Political Change	4

### Development Theory and Methodology

A,RESEC C251	Microeconomics of Development	3
A,RESEC C253	International Economic Development Policy	3
ECON 270B	Development Economics	3
ECON 270C	Development Economics	3
ENE,RES 273	Research Methods in Social Sciences	3
ENE,RES 102	Quantitative Aspects of Global Environmental Problems	4
GEOG 214	Development Theories and Practices	4
GEOG 215	Seminar in Comparative and International Development	4
POL SCI 139B	Development Politics	4

### Resources and the Environment

DEVP 222	Economics of Sustainable Resource Development	3
DEVP 227	Principles of Natural Resource Management	2

**Science, Technology, and Society Studies**

AFRICAM 134	Information Technology and Society	4
COMPSCI 195	Social Implications of Computer Technology	1
STS C200	Topics in Science and Technology Studies	3
STS C250	Science and Technology Studies Research Seminar	3

**Information Technology Design and Infrastructure**

COMPSCI 160	User Interface Design and Development	4
INFO 213	Introduction to User Experience Design	4
INFO 214	User Experience Research	3
MBA 290T	Special Topics in Innovation and Design	0.5-3
MEC ENG 221	Graduate Introduction to Lean Manufacturing Systems	3
MEC ENG 290P	New Product Development: Design Theory and Methods	3

**Public Health for Developing Regions**

PB HLTH 202B	Ethnic and Cultural Diversity in Health Status	4
PB HLTH 212A	International Maternal and Child Health	2
PB HLTH 220E	Global Health Policy	3
PB HLTH 226D	Global Health Economics	3
DEVP 232	Foundations of Public Health	2
PB HLTH 253B	Epidemiology and Control of Infectious Diseases	3
PB HLTH 253D	Behavior and Policy Science in HIV Treatment and Prevention	3
PB HLTH 259B	Practical Applications of Epidemiologic Methods in Developing Countries	3
PB HLTH 271D	Global Burden of Disease and Comparative Risk Assessment	3
PB HLTH 260F	Infectious Disease Research in Developing Countries	2

**Business**

CIV ENG 209	Design for Sustainable Communities	3
CIV ENG 292A	Technologies for Sustainable Societies	1
MBA 215	Business Strategies for Emerging Markets: Management, Investment, and Opportunities	2-3
MBA 292T	Topics in Business and Social Impact (Entrepreneurship for Sustainability: Driving Change From Within Corporations)	1

**Education**

EDUC 240B	Theoretical Issues in the Study of Literacy	3
EDUC 241B	Language Socialization	3
EDUC 241C	Narrative across Learning Contexts	3
EDUC 250A	Qualitative Research in Language/Literacy Education	3
EDUC 290B	Special Topics Seminars: Education in Language, Literacy, and Culture	1-4
EDUC 295B	Technology, Computing, and Data in Classrooms	3
EDUC 295C	Integrating Technology into Secondary English Instruction	4

**Wrap-Up Course**

INFO 290	Special Topics in Information (ICTD Research Seminar)	1-4
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**Fieldwork**

Certificate students must complete at least six weeks of eligible, approved development-focused fieldwork.

The goal of the field work requirement is to give students a hands-on experience of day-to-day happenings in a development context. While long-term ethnographic research focuses on forces, factors, histories, and people who play decisive roles in determining social outcomes issues, by situating local relationships, understandings and meanings, within shifting policies and economies, a six-week field trip is geared more towards getting a sense of the way a local partner functions within a community and the lifestyles, everyday interactions, and problems faced by the communities these partners serve.

**Eligible Fieldwork**

Most eligible fieldwork will be conducted abroad, with an organization involved in development. Students may also receive approval for fieldwork performed locally, if the project is with an organization focused on development and the student's work is clearly development-focused. Eligible fieldwork may include organizations that are not primarily development-oriented, if the student is embedded in a division focused on development or 'emerging markets.' In some cases, fieldwork may be eligible even if the organization has no international presence, if it has a clear non-profit social mission, working with local underprivileged or marginalized communities. Fieldwork conducted independently (not through an established organization) may be eligible, particularly for Ph.D. students, if the student can demonstrate the project's development focus.

**Arranging Fieldwork**

We expect that most eligible fieldwork will be conducted as an internship with a development organization (although some Ph.D. students may instead perform independent research fieldwork).

Students are responsible for arranging their own fieldwork or internships. Trips are usually arranged in conjunction with a local partner. Students will receive limited assistance from I School faculty through their connections and can make use of several highly active ICTD-themed mailing lists, as well as applying their own initiative to secure fieldwork or internship opportunities.

No dedicated funding is available to support student fieldwork; students should seek paid opportunities or otherwise arrange funding themselves (for example, through dissertation grant funds such as from the NSF or Fulbright Foundation).

**Fieldwork Approval**

Students must submit the Fieldwork Approval Form for approval of the fieldwork for the ICTD certificate. All projects must be approved by the I School ICTD advisory committee.

Deadline: When possible, the form should be submitted at least two months before the expected start date of the fieldwork, in order to allow time for feedback. However, in exceptional cases, the Fieldwork Approval Form can be submitted after the completion of the fieldwork.

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