The GA Tech Ph.D. in Economics uniquely focuses on the common globalization and innovation issues that interconnect environmental economics, industrial organization and international economics.
The Fields

Many of the global advances and challenges that we currently face lie at the intersection of three key fields in economics: international economics, industrial organization and environmental economics. The economic characteristics and rationale for the international flow of goods, services, labor, capital and technology are in the realm of international economics. The analysis of the structure of industries and markets that determine the strategies of firms with respect to their pricing, production, location and product and process innovation, along with the regulatory and antitrust policies that constrain firms’ behaviors are the scope of industrial organization. Polluting activities and resource depletion associated with the consumption and production of market and non-market participants form the main areas of study in environmental economics. Meeting the challenges from increasing globalization and economic growth requires an approach which integrates international economics, industrial organization, and environmental economics. The common issues addressed in our areas of specialization bring about synergies with closely related graduate programs in the College of Management, the Department of City and Regional Planning in the College of Architecture, the School of Civil and Environmental Engineering, the School of Earth and Atmospheric Sciences, the School of History, Technology and Society, the School of Industrial & Systems Engineering, the School of Public Policy, and the Sam Nunn School of International Affairs. This provides the School’s faculty with opportunities to pursue interdisciplinary research and teaching in those areas that lie at the intersections of environmental sustainability, industrialization, modernization and globalization.

Environmental Economics

Environmental Economics covers three interrelated areas: (i) standard topics; (ii) innovation; and (iii) international environment and the global economy. Among the standard topics, the courses cover negative externalities, property rights, incentive design, emission taxes and tradable emission permits. The two course sequence examines the role of innovation with particular focus on innovation incentives originating with environmental regulations and globalization. The international focus explores the problems caused by trans-boundary pollutants (e.g., carbon dioxide and sulfur dioxide emissions) within and across nations, international environmental agreements, and the globalization impacts on the environment.

Industrial Organization

Industrial Organization studies market structures and their interactions, technological innovation and diffusion, and regulation and procurement. The sequence of courses covers price discrimination, price and non-price competition, and the strategic behavior of firms. The two course sequence also examines research and development and the adoption of new technologies. Topics discussed include the value of innovation, patent races, strategic adoption of new technologies, network externalities, patent licensing, and research joint ventures. Also covered are issues related to regulations and procurement. Topics examined in this part are incentive regulations, antitrust law and competition policy.

International Economics

International Economics covers all basic material in international trade, such as the Ricardian and Heckscher-Ohlin models, extensions to many goods and factors, trade in intermediate inputs and wages, increasing returns, gains from trade and regional agreements, import tariffs and dumping, import quotas and export subsidies, political economy of trade policy and trade and endogenous growth. The two course sequence also examines the relationship between international trade, foreign direct investment and technological innovation and diffusion.
The Program

As in every distinguished Ph.D. program in Economics in the US, students receive rigorous training in microeconomic theory and quantitative methods during their first year of study. But, unlike any other Ph.D. program in Economics, our first year core coursework also features a two-course sequence in the economics of innovation. This cluster is designed to teach students the key microeconomic and macroeconomic foundations of innovation. In Microeconomics of Innovation, students are taught the microeconomic theoretical concepts, techniques and reasoning that underlie innovation processes. The course starts by introducing students to the historical evolution of institutions that promote innovation. Following this historical introduction, students learn that knowledge is a public good and see prizes and intellectual property rights as incentive mechanisms designed to spur research and development. Students later examine several models of cumulative innovation, and study patent and copyright enforcement and litigation, private versus public funding, and the effects introduced by network externalities and globalization issues. In Macroeconomics of Innovation, students learn the macroeconomic factors that lead to technological change, the roles played by technological innovation and knowledge spillovers as promoters of economic growth, and the scope for fiscal and monetary policies to foment research and development and hence economic growth.

The Requirements

The requirements a student must fulfill in order to obtain a doctoral degree are:

1. Pass the written preliminary exams: one exam for each first-year cluster.
5. Teach two undergraduate courses.

In order to continue in the program beyond the first year, a student must pass the preliminary examinations in Microeconomic Theory, Technological Innovation and Quantitative Methods in the summer following the first year. The contents of exams are the materials covered in the first year core courses. A student who fails an exam in June has the opportunity to retake the exam in August.

Besides the second-year-paper requirement, students must also fulfill the third-year-paper requirement. The third year paper is due in mid-March and should follow the structure of a journal article, describing why the topic is important, the relevant literature, the analysis, and a set of results. The expectation is that the third year paper represents a substantial improvement relative to the second year paper in terms of quality. Every student must pass two oral examinations. The first is a dissertation proposal defense. This oral examination covers the breadth of the student’s main field of research, involving extensive questioning on the topic of the student’s dissertation proposal and related research. The second is the dissertation defense itself. The format of this second oral examination is the same as the first.

Every student must also teach two undergraduate courses. This is an integral component of Economics Ph.D. programs in the US. This teaching experience enhances the opportunities of students seeking teaching and research careers in academia.
The School

The School of Economics at Georgia Tech resides in the Ivan Allen College of Liberal Arts, which offers Georgia Tech students the unique opportunity for an economics education in the context of a technological environment. For society to reap the full economic benefits of technological advances in such diverse areas as information and communications, biotechnology, health, transportation, energy, and the environment, it is important that we understand the impact that these technologies have upon our economic lives.

The School of Economics’ mission is to provide our students with economic and quantitative skills that will enable them to develop economic insights on phenomena in technologically complex environments, to contribute to the body of economic knowledge, and to inform, educate, and generally interact with the community at large.

Our students benefit from and the school’s faculty contributes to the strong interdisciplinary culture that exists at Georgia Tech. The Institute’s emphasis upon technology affords the School of Economics significant opportunities for innovative teaching and research collaborations. In a world where problems are increasingly multifaceted with no easy solutions, collaborative approaches to understanding some of society’s most complex problems allow students to more completely understand the economic implications of alternative policies.

The Process

The School of Economics welcomes applicants with strong academic backgrounds. Applicants should complete the online application form on the Georgia Tech Graduate Admissions home page (http://www.grad.gatech.edu/admissions).

Each year, limited funding is awarded to the best students on a competitive basis. To be considered for funding, completed applications must be received by February 15.

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The Faculty

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Macroeconomics, Entrepreneurship

Vivek Ghosal
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Industrial Organization, Economic Development and Applied Econometrics

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Applied Microeconomics, Industrial Organization, International Trade

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School of Economics

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The Georgia Institute of Technology is one of the nation’s top ten public universities and internationally recognized as a preeminent technological university. Founded in 1885 to help build Georgia’s technological infrastructure, GA Tech far exceeded its founders’ expectations, becoming a prominent research university, serving as a source of innovation and new technologies that spur economic development for the state, the nation and the world.

As one of the leading research institutes in the country, the Georgia Institute of Technology is committed to improving the human condition through advanced science and technology. At Georgia Tech, more than 19,000 undergraduate and graduate students receive a focused, technologically based education. In addition to economics, Tech also offers programs in engineering, architecture, computing, management, liberal arts, and the sciences.

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