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FULL SCHOLARSHIPS
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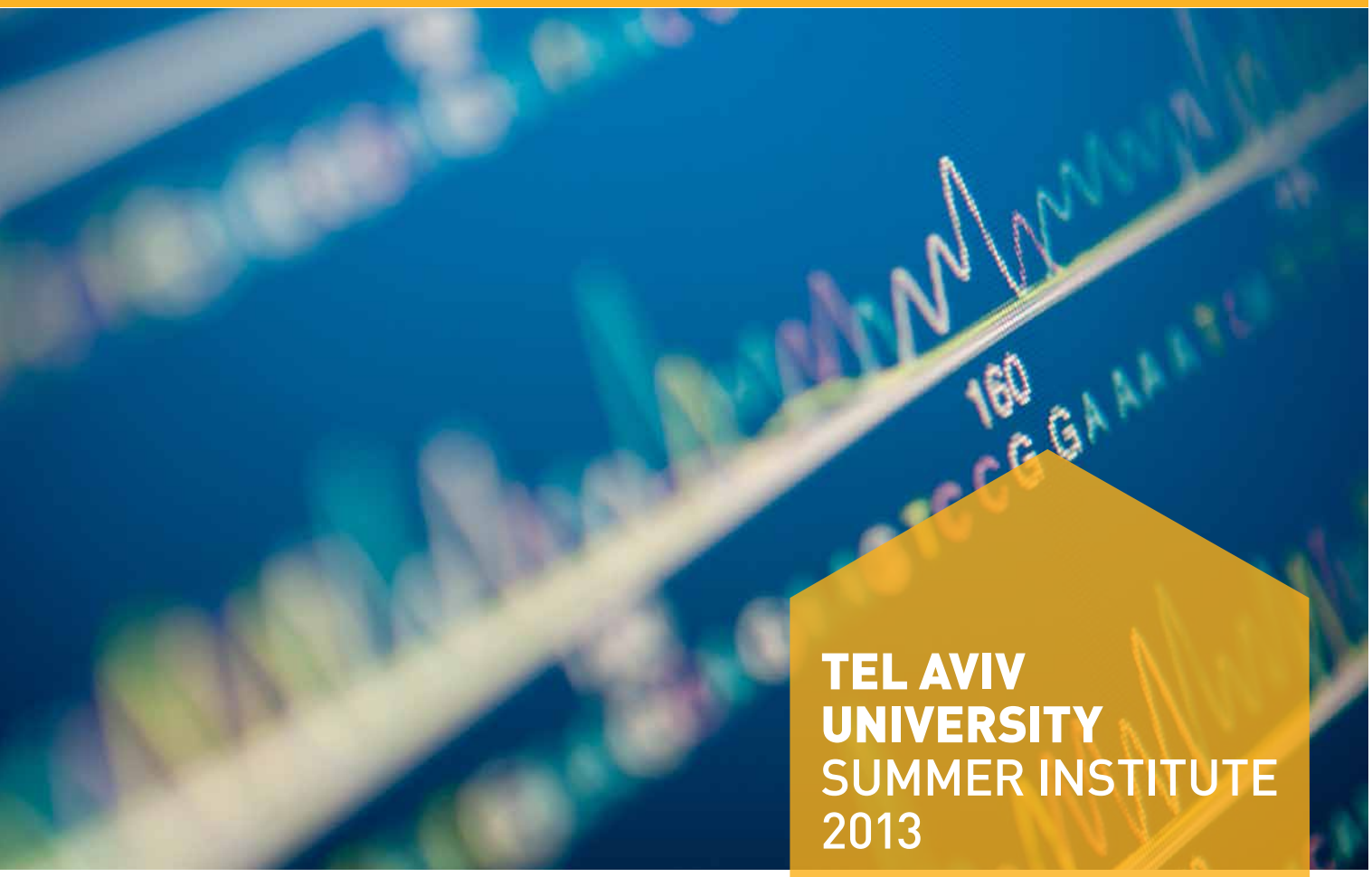

TEL AVIV UNIVERSITY SUMMER INSTITUTE 2013

JULY 07 – AUGUST 16, 2013

ENGINEERING IN THE START-UP NATION: CONTROL SYSTEMS AND ENERGY CONVERSION LABORATORIES

A unique summer program provides students a rigorous academic experience that combines coursework and laboratory experiments in two advanced courses.

Study in Israel's largest and most influential electrical and electronics engineering school – with 30 laboratories, a diverse and distinguished faculty, the largest concentration of master's and doctoral students, and the highest acceptance thresholds in the country.

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TEL AVIV UNIVERSITY
INTERNATIONAL

ENGINEERING IN THE START-UP NATION: CONTROL SYSTEMS AND ENERGY CONVERSION LABORATORIES

THE SCHOOL OF ELECTRICAL ENGINEERING

The School of Electrical Engineering is the birthplace of free internet phone calls and flash drives, the power that drives cancer-detection medical imaging devices and the technology behind NASA's on-board solar energy systems. The School's extensive collaborative endeavors with industry have been highly instrumental in shaping its constantly evolving study and research tracks.

CONTROL SYSTEMS

The field of control systems has changed dramatically in the last three decades. The advent of low cost microprocessors has enabled control algorithms to be embedded in almost every conceivable type of technology. The development of sophisticated computer aided design software has enabled analysis and controller design for complex multivariable systems. The needs of society including energy efficiency, improved safety and a cleaner environment have posed challenges that can only be solved with feedback control.

Numerous new applications for control have emerged, including such areas as biomedical systems, networks, production lines, and renewable energy systems. The School of Electrical Engineering at Tel Aviv University plays leading roles in all these developments.

Our research advances the state of the art and this laboratory makes these new concepts accessible to students.

THE CONTROL SYSTEMS LABORATORY

Professor George Weiss

Topics covered:

- Analog Control Systems
- D.C. Servo Motor Control
- Solving Linear Equations by an Analog Computer
- Long Time-Delay System
- Balancing a Ball on a Beam
- Digital systems
- Linear systems Simulations
- Digital Control of a D.C. Servo Motor

ENERGY CONVERSION

In applications ranging from transportation to electricity production to energy consumption society is powered by energy conversion devices. Having fundamental expertise in applied fluid dynamics, students engage in result-oriented scientific and technological explorations that improve the efficient use of natural resources, while minimizing the environmental impact of these systems, as well as developing renewable energy sources.

Concepts covered:

- Three-Phase Power System: Voltages, currents, power in a symmetric network, phasor diagrams magnetic circuits: linear and non-linear magnetic circuits in direct and alternating currents, hysteresis and adds current losses, flux leakage, magnetic coupled circuits, forces.
- Transformer: Single and three-phase transformer structure, equivalent circuit, losses, efficiency, no-load and short circuit tests, voltage regulation.
- Induction Machine: Structure, rotating magnetic field, equivalent circuit, powers, losses, efficiency, speed-torque characteristics, starting, speed regulation.
- Solar Cell Systems: Properties, I-V characteristics, operating point, series and parallel connections, photovoltaic arrays, load I-V characteristics, maximum power point tracker.
- Direct Current Machine: Generators and motors in separate, shunt, series and compound excitations, structure, e.m.f., torque, power, losses, efficiency, generator load characteristics, motor mechanical characteristics, motor speed regulation.
- Converter: Basics of dc converters.

ENERGY CONVERSION LABORATORY

The laboratory utilizes concepts taught in energy transfer coursework, such as the items listed below, and provides experiments for students to apply the concepts. The following experiments are preformed:

- Single and three-phase transformer.
- DC machine.
- Induction machine.
- Synchronous machine.
- Programmable controller.

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ENGINEERING IN THE START-UP NATION: CONTROL SYSTEMS AND ENERGY CONVERSION LABORATORIES

ADMISSION AND SCHOLARSHIP

Undergraduate and graduate students are invited to apply online: international.tau.ac.il

- The following will have to be submitted:
- Official transcript and a grade point average of 80% and above
- Two academic recommendation letters

Demonstrated Command of English exams:

- TOEFL test results (minimum score: written 582, computer-based 223, or iBT 89) or the IELTS test (minimum score: 7)
- Application fee of USD60

Under a unique Israeli Government Sponsorship, excellent students from China will receive a scholarship covering full tuition costs for the program, including housing in Tel Aviv University student accommodation.

HOUSING AND FACILITIES

Students will be placed in our newly renovated Einstein dorms, adjacent to the Tel Aviv University campus. Dormitories are divided into suites of two bedrooms shared by two students per bedroom. Each suite is furnished and includes an air conditioner, cable TV, wireless, kitchenette and bathroom.

SERVICES AND SOCIAL LIFE

Outside of the classroom, an extensive program of cultural and social events gives students the chance to experience all that Tel Aviv and Israel have to offer. You will enjoy the following:

- Orientation Days before the start of the program
- Organized excursions to cultural destinations and subject-related sites of interest
- Social activities including on-campus events, museum visits, city tours and more
- 24/7 support of our social counselors staff, living in the dorms with the students
- Health insurance
- Access to our libraries and other on-campus services.

TAU & TEL AVIV

Tel Aviv University is one of Israel's foremost higher education institutions, attracting talented students and renowned faculty from around the globe to our campus in Tel Aviv. More than 30,000 students take part in our academic programs, from the bachelor's level to doctoral and beyond. Tel Aviv features an exciting mix of cultures and creativity with a Middle Eastern flair. With its sunny Mediterranean beaches and vibrant social scene, Tel Aviv provides the ideal setting for an unforgettable study experience.

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