

# January Intensive Term

2016-2017



## What is J-Term (January Intensive Term)?

J-Term is an opportunity to explore introductory engineering courses offered in a special 11-day intensive format to encourage current liberal arts students to test their interests in engineering. For most attendees, this experience is their first exposure to St. Louis and to applied fields of study. The students study and live together, greatly enhancing the educational and social value of the experience. It is an opportunity to get a head-start at building connections and community before enrolling as Dual Degree engineering students.

## Dates: December 26, 2016–January 7, 2017

- » **Monday, December 26, 2016** — Students should arrive by 5 pm.
- » **Tuesday, December 27, 2016** — Classes start and will be held daily including on New Year's Day.
- » **Saturday, January 7, 2017** — Students will depart in the late afternoon.
- » The schedule includes two days with no afternoon class.

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### Contact Information

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## Courses (choose one):

### Introduction to Electrical & Electronic Circuits; 3 units

Electron and ion motion, electrical current and voltage. Electrical energy, current, voltage, and circuit elements. Resistors, Ohm's Law, power and energy, magnetic fields and dc motors. Circuit analysis and Kirchhoff's voltage and current laws. Thevenin and Norton transformations and the superposition theorem. Measuring current, voltage, and power using ammeters and voltmeters. Energy and maximum electrical power transfer. Computer simulations of circuits. Reactive circuits, inductors, capacitors, mutual inductance, electrical transformers, energy storage, and energy conservation. RL, RC and RLC circuit transient responses, biological cell action potentials due to Na and K ions. AC circuits, complex impedance, RMS current and voltage. Electrical signal amplifiers and basic operational amplifier circuits. Inverting, non-inverting, and difference amplifiers. Voltage gain, current gain, input impedance, and output impedance.

### Engineering Mechanics I; 3 units

Foundational course for Mechanical Engineering. Study of mechanical structures that are stationary and not in motion. Rigid bodies or structures and how they maintain the equilibrium. The type forces acting on them; how to reduce the multiple forces into an equivalent force; analysis of trusses, frames and machines; how to find the center of an area are the key features of first half of the course. What happens to a structure internally while all different forces are acting on them. The stress, strain, strength, stiffness are some of the features would help you to understand different materials and determine how strong or stiff is a structure. Hands-on fun projects included.

### Eligibility

Students must have a GPA of B+ (3.25/4.0) or better, both overall and in science and mathematics courses. Pre-requisite courses: Calculus III and calculus-based Physics which covers electromagnetism and optics.

### Example Daily Schedule

Morning	Hot breakfast at hotel
8:30 am	Shuttle departs hotel for campus
9 am – 12:30 pm	Lecture
12:30 – 1:30 pm	Lunch
1:30 – 5:30 pm	Lecture/problem solving session/ Teaching Assistant office hours
5:30 pm	Shuttle departs campus for hotel
5:30 – 7 pm	Hot dinner options at hotel

### Fees

The **\$1,950** program fee covers tuition, textbook, hotel (double room \*\*\*), daily hot breakfast at hotel, and lunches on campus. Students should budget for travel to and from St. Louis, dinner, personal expenses and snacks.

Tuition	\$6,120
Program Fees**	\$1,400
Affiliation Discount*	- 5,570
<b>Program Fee</b>	<b>\$1,950</b>

\*J-Term Affiliation discount will be awarded to students attending a college or university affiliated with the Washington University Dual Degree Engineering Program.

\*\*Program fees include hotel charges, transportation to/from hotel and campus, most meals, course textbook and other miscellaneous expenses.

\*\*\* Additional \$800 for a single room, bringing the program fee total to \$2,750.

### How to Register

#### Send the following to the Dual Degree Program:

1. Registration form with Liaison Officer signature.  
Download form: [engineering.wustl.edu/dualdegreejterm](http://engineering.wustl.edu/dualdegreejterm)
2. Non-refundable deposit of \$250 (check or money order made out to Washington University)

### Deadlines

**November 15** Registration form and \$250 deposit

**November 30** Remaining balance of \$1,700

Full refunds minus the deposit will be issued for student cancellations made by December 3, 2016. Cancellations made after this date will be handled on a case-by-case basis. Full refunds including the deposit will be issued to students if the course is cancelled due to insufficient enrollment by December 5, 2016.