GEORGIA TECH LORRAINE
GEORGIA INSTITUTE OF TECHNOLOGY
School of Electrical and Computer Engineering
ECE 3040
Microelectronic Circuits
Fall Semester 2018

Course objective  Introduction to the basic concepts of semiconductor physics, study of the basic devices - diode, transistor - and analysis of circuits with semiconductor devices.

Course outline

- Basic Semiconductor Physics
- PN junction
- Bipolar Junction Transistors
- MOS Field Effect Transistors
- Single Stage Amplifiers
- Operational Amplifiers
- Differential Amplifiers

Lectures
This course is 4 SCH. Lectures are 1:20 hour or 50 minutes long, scheduled every MTW.

Instructor  Dr Bertrand P. Boussert, office 225
Phone: +33 (0)38 720 3947
Email: bertrand.boussert@ece.gatech.edu

Office hours  This course is dense and challenging as you will learn new concepts and materials. I am strongly encouraging you to benefit from office hours if you have any questions on course material. Do not wait if you have any difficulty and come to see me. The office hours will be scheduled every Wed 3:00 pm to 4:30 pm

Courses prerequisite  ECE 2030, ECE 2040, MATH 2403, CHEM 1211
Books, handouts  The two reference books are: R. Pierret Semiconductor Device Fundamentals, Addison-Wesley 1996 
All class handouts will be available from Canvas.

Course resources  The course resources like power point files, homeworks and solutions, extra resources will be posted on Canvas. Come to class with the power points of the lecture, it will facilitate your access to material and to take notes.

Honor code  GT Academic Honor Code is strictly enforced at GT Lorraine. Adherence to the Georgia Tech Honor Code is expected and all suspected instances of academic misconduct will be reported to the Dean of Students. It is your responsibility to ask for clarification if collaboration guidelines, test-taking policies, etc. are not clear. You will find detailed information at http://osi.gatech.edu/content/honor-code.

Grading  Your grade will be determined using the following weighting.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Exam #1</td>
<td>25%</td>
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<tr>
<td>Exam #2</td>
<td>25%</td>
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<tr>
<td>Final</td>
<td>40%</td>
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The final grade will be curved based on your attendance, performance and participation. Over two unexcused absences, no curving will be applied. In case of a health issue that prevent you taking an exam, I will require a note from a doctor before rescheduling the exam otherwise you will have an F to the exam.

Attendance policy  This class is a core course of your curriculum, you better have to be present. Attendance will be taken at the beginning of each class. For more information about class attendance at Georgia Tech, you may go to http://www.catalog.gatech.edu/rules/4/.

Student-Faculty Expectations Agreement  At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See http://www.catalog.gatech.edu/rules/22/ for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.
Major Emergencies  If you have some sort of major life emergency - serious illness or injury, death in the family, etc. - that seriously impedes your progress in the class, please let me know as soon as possible so we can work something out. Don’t disappear with no warning half way through, making me think that you dropped the class, and then reappear out of nowhere the week before finals asking what you can do to make things up.

Disabilities  Georgia Tech offers accommodation to students with disabilities, this policy is extended to GT Lorraine. If you need any accommodation, then inform Dr Bertrand Boussert and Mrs Corinne Guyot with a certificate from the Office of Disability Services.

Miscellaneous  In classroom, the cellphone is turned off or in Do Not Disturb mode, no food or drink during class time. You can use your laptop to take notes but not for gaming.

Assignments  Assignments and solutions will be posted periodically on Canvas. The homeworks will not be graded, but solutions will be discussed in-class. It is your responsibility to work on each problem, as you may be asked to work it on the board and present your solution to the class.

Important dates  A tentative calendar is proposed below, the dates of exams #1 and #2 will be confirmed 2 weeks in advance.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>First Day of Class</td>
<td>Aug 21</td>
</tr>
<tr>
<td>Exam #1</td>
<td>Sep 26</td>
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<tr>
<td>Exam #2</td>
<td>Nov 6</td>
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<tr>
<td>Last Day of Class</td>
<td>Dec 4</td>
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<tr>
<td>Final Exam</td>
<td>Dec 6 - 14</td>
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