

## Computer Engineering Undergraduate Leveling Classes

The Deficiency classes that you have been assigned are shown as the marked items in the following list of classes, where each class is listed with its catalog description. It is possible that you may have taken some of the classes that are listed as deficiencies below, but the classes were overlooked in determining your deficiencies due to differing course names or other complicating factors. If you believe that we have overlooked an equivalent course that was taken somewhere else, you can apply to have that deficiency waived by completing the waiver request form available in the Computer Science & Engineering Department office or on line at our website at <http://www.cse.unt.edu/education/defwaive.pdf>.

**Mathematics (through multivariable calculus)**  
MATH 1710, 1720, 1780, 2700, 2730, 2770

**Physics (including mechanics, electricity and magnetism)**  
PHYS 1710/1730 and PHYS 2220/2240

**CSCE 2100. *Computing Foundations I (3 Hours).***

Introduces student to both data structures and formalisms used in computer science, such as asymptotic behavior of algorithms. Learn about data structures and the formalisms used to both describe and evaluate those data structures simultaneously. By the end of the two-semester sequence of which this course is the first part, each student will have a solid foundation in conceptual and formal models, efficiency, and levels of abstraction as used in the field of computer science. **Prerequisite: CSCE 1040**

**CSCE 2110. *Computing Foundations II (3 Hours). Continuation of Computing Foundations I.***

Further introduces students to both data structures and formalisms used in computer science, such as asymptotic behavior of algorithms. Learn about data structures and formalisms used to both describe and evaluate those data structures simultaneously. By the end of the two-semester sequence of which this course is the second part, each student will have a solid foundation in conceptual and formal models, efficiency, and levels of abstraction as used in the field of computer science. **Prerequisite: CSCE 2100.**

**CSCE 3612 *Embedded Systems (3 Hours)***

Computer Systems as embedded computing elements and micro-controllers. System specifications using UML or other high level abstract models. Issues and constraints on embedded computing systems, including power, performance, memory and size. Use of DSP, ASIC and micro-controllers in a single design. **Prerequisite(s): CSCE 2610, EENG 2710.**

**CSCE 3730 *Reconfigurable Logic (3 Hours)***

Advanced concepts in Boolean algebra, use of hardware description languages as a practical means to implement hybrid sequential and combinational designs, digital logic simulation, rapid prototyping techniques, and design for testability concepts. Focuses on the actual design and implementation of sizeable digital design problems using representative Computer Aided Design (CAD) tools.

**Prerequisite: CSCE 2610.**

**EENG 2710 *Digital Logic Design (3 Hours)***

Digital computers and digital information processing systems; Boolean algebra, principles and methodology of logic design; machine language programming; register transfer logic; microprocessor hardware, software and interfacing; fundamentals of circuits and systems; computer organization and control; memory systems, arithmetic unit design. **Prerequisite: MATH 1720**

**EENG 3510 *Electronics I (Devices and Materials) (3 Hours)***

Introduction to contemporary electronic devices, terminal characteristics of active semiconductor devices, and models of the BJT and MOSFET in cutoff and saturation region are introduced. Incremental and DC models of junction diodes, bipolar transistors (BJTs), and metal-oxide semiconductor field effect transistors (MOSFETs) are studied to design single and multistage amplifiers. **Prerequisite: EENG 2610**

**Plus any required Prerequisite**

## Computer Science Undergraduate Leveling Classes

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**CSCE 1030. *Computer Science I (4 Hours)***

Introduction to computer science and engineering, problem-solving techniques, algorithmic processes, software design and development.

**Prerequisite(s): MATH 1650 or better**

**CSCE 1040. *Computer Science II (3 Hours)***

Continuation of CSCE 1030. Software design, structured programming, object oriented design and programming.

**Prerequisite(s): CSCE 1030 and MATH 1650 (may be taken concurrently)**

**CSCE 2100. *Computing Foundations I (3 Hours)***.

Introduces student to both data structures and formalisms used in computer science, such as asymptotic behavior of algorithms. Learn about data structures and the formalisms used to both describe and evaluate those data structures simultaneously. By the end of the two-semester sequence of which this course is the first part, each student will have a solid foundation in conceptual and formal models, efficiency, and levels of abstraction as used in the field of computer science. **Prerequisite: CSCE 1040**

**CSCE 2110. *Computing Foundations II (3 Hours)***. Continuation of *Computing Foundations I*.

Further introduces students to both data structures and formalisms used in computer science, such as asymptotic behavior of algorithms. Learn about data structures and formalisms used to both describe and evaluate those data structures simultaneously. By the end of the two-semester sequence of which this course is the second part, each student will have a solid foundation in conceptual and formal models, efficiency, and levels of abstraction as used in the field of computer science. **Prerequisite: CSCE 2100.**

**CSCE 2610. *Assembly Language and Computer Organization (3 Hours)*** Principles of computer systems organization, instruction sets, computer arithmetic, data and control paths, memory hierarchies, and assembly language.

**Prerequisite(s): CSCE 2100 Co-requisite(s): ENGR 2720**

**CSCE 3110. *Data Structures and Algorithms (3 Hours)***

Computer storage structures; storage allocation and management; data sorting and searching techniques; data structures in programming languages. **Prerequisite(s): CSCE 2100 and 2110**

**Plus any required Prerequisite**