Prince Sattam bin Abdulaziz University
College of Computer Engineering & Sciences
Computer Engineering Department

STUDENT HANDBOOK

Computer Engineering Program | 2026-2027

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1. WELCOME MESSAGE

Welcome to the Computer Engineering (CE) Program at Prince Sattam bin Abdulaziz University (PSAU). This handbook provides essential information to guide you throughout your academic journey, understand program requirements, and make informed decisions about your studies. It is designed to support your success and ensure alignment with institutional policies and ABET accreditation standards.

2. ABOUT THE COMPUTER ENGINEERING PROGRAM

2.1 Program Overview

The Computer Engineering (CE) Program prepares graduates with strong foundations in hardware, software, embedded systems, digital design, computer networks, and emerging technologies. The curriculum integrates theoretical knowledge, hands-on laboratory practice, and design experiences to meet both national and international accreditation expectations. Graduates who successfully complete all program requirements are awarded the Bachelor of Science in Computer Engineering (B.Sc. CE).

2.2 Department History

The Department of Computer Engineering was established in the academic year 1429–1430 H as part of the College of Computer Engineering and Sciences under King Saud University. In 1430–1431 H, the colleges and departments in the southern region became part of Al Kharj University, which was later renamed Salman bin Abdulaziz University, and eventually Prince Sattam bin Abdulaziz University.

The department typically enrolls 20–25 students per cohort, with regular admissions occurring each year. The program is selective, and students are admitted based on their

academic performance during the first three semesters of the common preparatory and foundational curriculum.

2.3 Program Mission

To provide a suitable environment for graduating highly qualified computer engineers, capable of solving problems and assuming leadership to make a significant contribution to a knowledge society.

2.4 Program Educational Objectives (PEOs)

Within a few years of graduation, the graduates of the CE Program are expected to:

PEO1. Practice professionally and ethically as individuals, team members, or leaders in computer engineering or related fields.

PEO2. Advance successfully in their careers or postgraduate studies by participating in research and relevant professional activities.

PEO3. Engage in lifelong learning to adapt to emerging technologies and enhance their professional skills.

2.5 Student Outcomes (SOs)

The Computer Engineering program enables students to acquire, by the time of graduation, the following learning outcomes:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.

4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

3. PROGRAM STRUCTURE

The Computer Engineering (CE) Program at Prince Sattam bin Abdulaziz University is delivered over five years (ten levels) and consists of 156 credit hours. The curriculum progresses from foundational sciences and mathematics to advanced computer engineering topics, laboratory practice, and capstone design experiences. The structure aligns with national qualification frameworks and ABET expectations for engineering programs.

3.1 Study Plan Summary

The CE curriculum is designed to develop student competencies in a logical, progressive manner. Early levels focus on foundational knowledge, while later levels emphasize engineering depth, system integration, and professional practice.

A typical progression across the ten levels is as follows:

- Levels 1–2: Foundational courses in physics, calculus, English language skills, Islamic culture, communication, and introductory computing.
- Levels 3–4: Core computing and mathematical foundations, including logic design, discrete mathematics, programming, data structures, and differential equations.

- Levels 5–6: Intermediate CE courses such as computer organization, electrical circuits, electronic circuits, signals and systems, microprocessors, and artificial intelligence.
- Levels 7–8: Advanced CE topics including control systems, digital systems design, data communications, embedded systems, VLSI design, and Graduation Project I.
- Levels 9–10: Specialized electives, robotics, network security, Graduation Project II, and Field Training (CE4901), which requires completion of 140 credit hours.

Students are expected to follow the recommended sequence to ensure prerequisite compliance and timely graduation. The full study plan, including course prerequisites and credit hour distributions, is provided in Appendix A.

3.2 Course Categories

The Computer Engineering (CE) curriculum is organized into scientifically structured categories that ensure balanced development across general education, foundational sciences, computing fundamentals, engineering sciences, and advanced computer engineering topics. The 156-credit-hour program is distributed across the following subject areas:

3.2.1 General / Broad Education (29 credit hours)

These courses develop communication, cultural understanding, and essential academic skills. They include:

- 16 credit hours of Language Skills (Arabic and English)
- 8 credit hours of Islamic Culture
- 5 credit hours of General Skills, including computer skills and communication skills

3.2.2 Mathematics and Basic Sciences (30 credit hours)

This category provides the analytical and scientific foundation required for engineering practice. It includes:

- 22 credit hours of Mathematics, covering calculus, discrete mathematics, probability, and statistics
- 8 credit hours of Basic Sciences, consisting of Physics I and Physics II

3.2.3 Engineering Sciences (15 credit hours)

This category introduces fundamental engineering principles and analytical methods. It includes:

- 8 credit hours in Electrical and Electronic Circuits
- 7 credit hours in Signals and Control Systems

3.2.4 Computing Sciences (29 credit hours)

These courses establish core computing competencies essential for CE practice. They include:

- 20 credit hours in programming, operating systems, data structures and algorithms, artificial intelligence, and ethical/professional practices
- 6 credit hours in software engineering and software project management
- 3 credit hours in database systems

3.2.5 Computer Engineering (44 credit hours)

This category forms the technical core of the CE program, covering hardware, software, and integrated system design. It includes:

- 35 credit hours in logic design, microprocessors, digital systems, computer architecture, embedded systems, data communications, networks, security, robotics, and VLSI design
- 6 credit hours of Capstone Design, completed over two semesters
- 3 credit hours of Industrial Training, completed over an 8-week full-time training period

3.2.6 Technical Electives (9 credit hours)

Students complete 9 credit hours of technical electives, selected primarily from advanced Computer Engineering courses, with additional options in Computer Science and Software Engineering. These electives allow students to explore specialized or emerging areas of interest (see Appendix C).

Students may choose freely from the approved elective list or select courses from one of the concentration areas if they wish to develop focused expertise in a major sub-field of Computer Engineering:

- Digital Systems
- Network Systems
- Intelligent Systems
- Storage Systems
- Software Systems

Electives within these concentration areas provide depth in specific domains while maintaining flexibility for individualized academic pathways.

A detailed breakdown of the course categories and credit hour distribution is provided in Appendix B, and the full prerequisite structure is presented in Appendix A.

3.3 Course Sequencing

The CE curriculum follows a structured sequence to ensure that students build knowledge systematically and meet all prerequisite requirements.

3.3.1 Foundational Years (Levels 1–4)

Students complete university requirements and foundational scientific and computing courses such as Physics I & II, Differential & Integral Calculus, Programming I & II, Logic Design, Data Structures, Linear Algebra, and Differential Equations. These courses establish the mathematical and computational base required for advanced CE topics.

3.3.2 Intermediate Engineering Years (Levels 5–6)

Students progress into core CE courses including Computer Organization, Electrical Circuits & Lab, Electronic Circuits & Lab, Microprocessor Systems, Signals and Systems, Operating Systems, and Introduction to Artificial Intelligence. These courses introduce engineering analysis and hardware–software integration.

3.3.3 Advanced Engineering Years (Levels 7–8)

Students take advanced CE courses and begin specialized elective courses. Courses include Digital Systems Design, Data Communications, Control Systems & Lab, Embedded Systems Design, VLSI Design, and Computer Networks. Students also complete Graduation Project I (CE4910).

3.3.4 Final Year (Levels 9–10)

Students complete advanced electives, Robotics and Automation, Network Security, Computer Networks Lab, Graduation Project II (CE4921), and Field Training (CE4901). This stage integrates all program competencies and prepares students for professional practice.

3.3.5 Prerequisite Flow

Students must follow prerequisite chains to avoid delays. Examples include:

- CE3411 → CE2401
- CE3711 → CE3701 + STAT1050
- CE4921 → CE4910

The complete prerequisite structure is shown in Appendix A (Table A-2).

4. ACADEMIC ADVISING SYSTEM

Academic advising at the College of Computer Engineering and Sciences (CCES) is an essential component of student success. Each student is assigned a faculty advisor who provides guidance throughout the academic journey, ensuring proper progression, compliance with university regulations, and timely graduation.

4.1 Purpose of Academic Advising

Academic advising supports students by helping them:

- Understand university and program requirements
- Follow the approved study plan and avoid delays in graduation

- Select appropriate courses each semester based on prerequisites and academic standing
- Address academic challenges and improve performance
- Access university support services when needed

These functions align with PSAU's institutional advising framework, which recommends that a student needs to meet with his advisor at least once each semester to review progress.

4.2 Role of the Academic Advisor

The academic advisor is responsible for:

- Reviewing the student's academic progress, Grade Point Average (GPA) and Cumulative GPA (CGPA)
- Approving course selections and ensuring prerequisite compliance
- Providing guidance on course sequencing and workload balance
- Assisting students facing academic or personal difficulties
- Coordinating with the Academic Advising Unit (AAU) for cases requiring special attention
- Referring students to relevant university units (e.g., counselling, registration, alumni services)

This reflects the institutional process, for instance, a group of students is assigned a faculty member for academic advising, the advisor who keeps a check sheet to monitor student progress.

4.3 Student Responsibilities

Students are expected to:

- Meet their academic advisor at the beginning of each semester
- Follow the official CE study plan and monitor prerequisite requirements
- Track their academic standing, including GPA and probation status
- Adhere to PSAU regulations regarding attendance, registration, and conduct

- Maintain professional and ethical behaviour in all academic activities

These expectations align with PSAU's advising guidelines, which emphasize regular meetings and proactive communication.

5. REGISTRATION AND ACADEMIC PROCEDURES

PSAU uses an electronic registration system that ensures accurate tracking of student records and prevents enrolment in courses without completing prerequisites. Students must follow university regulations and deadlines for all registration activities.

5.1 Course Load

- Standard load: 15–18 credit hours per semester
- Minimum load: 12 credit hours
- Maximum load: 20–23 credit hours for students with a high CGPA or those with an expected graduation in the same semester. Registration above the standard load requires approval from the academic advisor and the Vice Deanship for Academic Affairs.

These limits align with PSAU's institutional regulations for undergraduate study.

5.2 Prerequisites

Prerequisites must be strictly followed. The registration system automatically blocks enrolment in courses when prerequisites are not met, i.e. no course can be registered unless all prerequisites were completed.

Examples from the CE study plan include:

- PHYS1040 → requires *PHYS1010* + *MATH1060*
- CS2301 → requires *CS1301*
- CE3411 → requires *CE2401*
- CE3711 → requires *CE3701* + *STAT1050*
- CE4921 → requires *CE4910*

Students are responsible for reviewing prerequisites before registration, as shown in Appendix A (Table A-2).

5.3 Adding and Dropping Courses

Students must adhere to PSAU's official deadlines for:

- Adding courses
- Dropping courses
- Withdrawing with a "W" grade

Late changes are not permitted except under approved exceptional circumstances.

5.4 Academic Probation

A student is placed on academic probation if the CGPA falls below 2.0, consistent with PSAU regulations: If a student's CGPA falls below 2.0, he gets an academic probation for a maximum period of two regular semesters.

During probation:

- The student must meet regularly with the academic advisor
- A recovery plan is developed to improve performance
- Failure to raise the CGPA to 2.0 within two regular semesters results in dismissal from the university.

6. ATTENDANCE, WITHDRAWAL, AND ACADEMIC STANDING

6.1 Attendance Policy

- Students must not miss more than 25% of class hours.
- Exceeding this limit results in a DN (Denial) grade and prohibition from the final exam.
- In exceptional cases (absence ≤ 50%), the College Council may allow the student to take the final exam with valid documentation.

6.2 Course Withdrawal

Students may withdraw within official deadlines and receive a W grade. Late withdrawals require exceptional approval.

6.3 Semester Withdrawal and Discontinuity

- Students may withdraw from a semester or fail to register for up to two consecutive or three non-consecutive semesters.
- Exceeding these limits results in termination of enrolment.

7. ASSESSMENT AND GRADING POLICIES

7.1 Coursework and Final Examination

- Each course is graded out of 100 marks.
- Coursework contributes 50–60%; the final exam contributes the remainder.
- Coursework may include quizzes, assignments, lab work, projects, and midterms.

7.2 Grading System

The PSAU grading table (A+, A, B+, …, F, IP, IC, DN, W) applies to all CE courses.

Table 7-1. Prince Sattam bin Abdulaziz University Grading System

Mark	Letter Grade	Grade in English	Points	Comment
95 – 100	A+	Exceptional	5.0	
90 and < 95	A	Excellent	4.75	
85 and < 90	B+	Superior	4.5	
80 and < 85	B	Very good	4.0	
75 and < 80	C+	Above average	3.5	
70 and < 75	C	Good	3.0	
65 and < 70	D+	High pass	2.5	
60 and < 65	D	Pass	2.0	
< 60	F	Fail	1.0	

--	IP	In-progress	--	Course continues for next semester
--	IC	Incomplete	--	Requirements not complete
--	DN	Denial	1.0	Attendance < 75%
--	W	Withdrawn	--	Optionally withdraw

7.3 GPA and CGPA Calculation

- GPA is calculated automatically by the Student Information System.
- CGPA determines academic standing and graduation classification.
- Course points attained by the student are calculated using the formula:

  Grade Points = Credit Hours × Points attained (from Table 7-1)

  For example, if the course is a three credit hours course and the student mark is 87, then the grade is B+ (4.5 points) and the grade points = 3 × 4.5 = 13.5
- *Grade Points* Average (GPA) is calculated for the semester using the formula:

$$GPA = \frac{\sum Semester\ courses\ Grade\ Points}{\sum Semester\ courses\ Credit\ Hours}$$

  The GPA is calculated by the Student Information System at the end of each semester using the above formula.
- Then the CGPA is updated for the whole semesters spent by the students in the college so far. The following formula is used

$$CGPA = \frac{\sum Grade\ Points\ for\ all\ semesters}{\sum Credit\ Hours\ for\ all\ semesters}$$

7.4 Evaluation of Course Work (CE Department)

- Courses typically include two midterms, a final exam, and additional assessments.
- Quality and Assessment Committee (QAC) reviews course results each semester.
- Critical cases are escalated to the Curriculum Review Committee (CRC), Department Council and College Council.

7.5 Evaluation of Design Work (Capstone)

Capstone courses (CE4910, CE4921) include:

- Feasibility analysis
- System design
- Prototype development
- Testing and validation
- Final documentation and presentation

Evaluation is shared between the supervisor and a faculty panel.

8. CAPSTONE PROJECT GUIDELINES

The Capstone Design sequence consists of CE4910 and CE4921.

8.1 CE4910 – Graduation Project I

Focuses on:

- Problem definition
- Literature review
- Requirements analysis
- System design

8.2 CE4921 – Graduation Project II

Focuses on:

- Full implementation
- Testing and validation
- Final documentation
- Oral presentation

8.3 Evaluation

Assessment includes:

- Supervisor evaluation
- Panel evaluation
- Prototype performance
- Documentation quality

9. FIELD TRAINING GUIDELINES

Field Training (CE4901) is a 3-credit requirement completed after earning at least 140 credit hours.

9.1 Purpose

Field Training provides:

- Practical engineering experience
- Application of theoretical knowledge
- Professional skills development

9.2 Requirements

Students must:

- Train in an approved organization
- Submit progress reports
- Submit a final training report
- Obtain an employer evaluation

9.3 Assessment

Grades are based on:

- Faculty supervisor evaluation

- Industry supervisor evaluation
- Final report quality
- Professional conduct

10. LABORATORY SAFETY AND CONDUCT

10.1 Safety Rules

- Wear appropriate lab attire and safety equipment.
- Follow instructor and technician instructions.
- Do not operate equipment without authorization.
- Report hazards immediately.

10.2 Conduct

- Maintain professional behaviour.
- Handle equipment responsibly.
- Keep workspaces clean.

11. STUDENT SUPPORT SERVICES

PSAU provides:

- Academic Advising Unit (AAU)
- Counselling and psychological services
- Career guidance and alumni services
- Library and learning resources
- IT and e-learning support
- Student clubs and activities

12. TRANSFER POLICIES

12.1 Transfer from Outside PSAU

Conditions include:

- Enrolment in a recognized institution
- No disciplinary dismissal
- Meeting PSAU transfer criteria

Course Transfer:

- Courses must match ≥80% of CE course content
- Grade must be C or higher
- Transferred courses appear as Pass and do not affect CGPA

12.2 Transfer Between PSAU Colleges

- Must occur before completing the sixth level
- Maximum of two transfers allowed
- All previous grades remain in the academic record

12.3 Transfer Within CCES Departments

- Allowed before the sixth level (exceptions possible)
- Maximum of two internal transfers
- All completed courses remain in the record

13. WORK IN LIEU OF COURSES

PSAU awards credit only through approved academic methods.

13.1 Transfer Credits

Accepted according to PSAU transfer regulations.

13.2 Field / Industrial Training

Credit is awarded for CE4901 under faculty supervision.

13.3 Extracurricular Activities

No academic credit is awarded. Students may be excused from attendance when representing PSAU.

14. GRADUATION REQUIREMENTS

14.1 Academic Requirements

To graduate with the Bachelor of Science in Computer Engineering (B.Sc. CE), a student must:

- Complete 156 credit hours
- Complete ten academic semesters
- Achieve a CGPA ≥ 2.0
- Complete all required courses

14.2 Graduation Classification

Class	CGPA
Excellent	4.5 and above
Very Good	3.75 to < 4.5
Good	2.75 to < 3.75
Pass	2.0 to < 2.75

14.3 Graduation Procedures

- Advisor and Vice Deanship verify remaining requirements
- Student submits Graduation Clearance Form
- Degree is awarded upon PSAU Council approval

APPENDICES

Appendix A. Study Plan

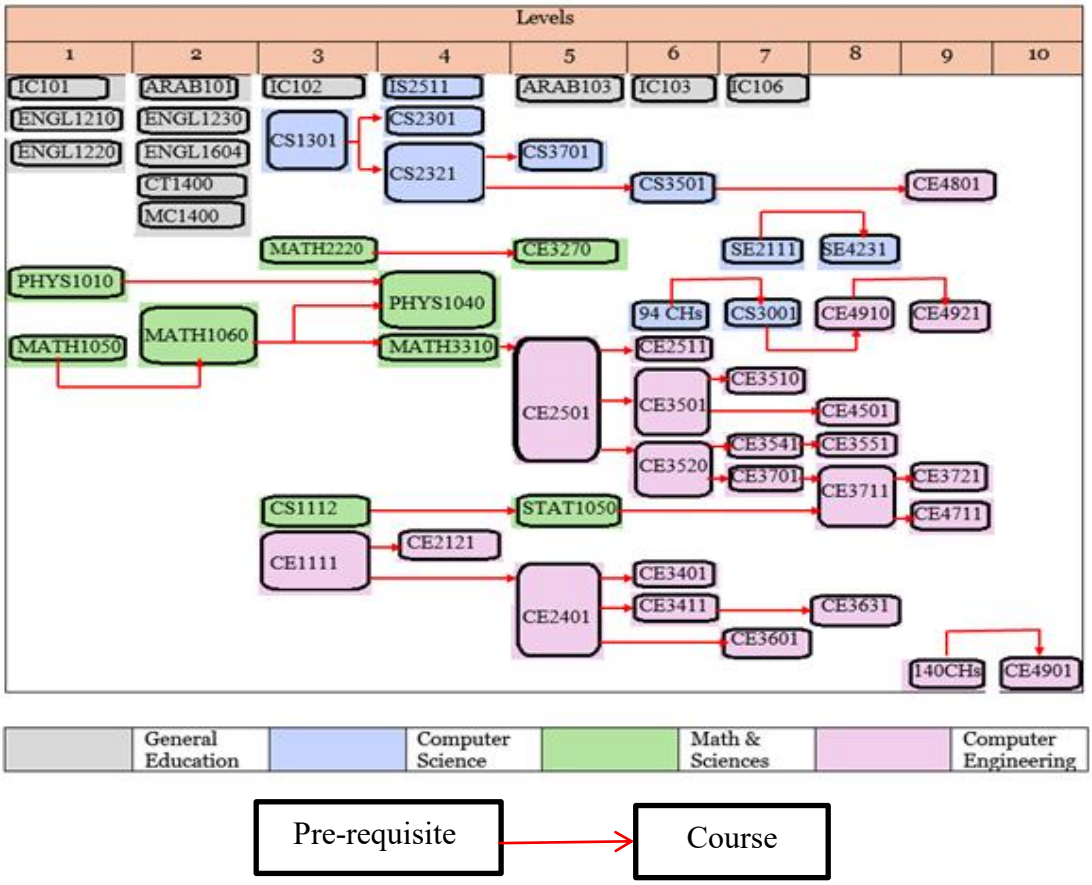
Table A-1. Computer Engineering Program Study Plan -1444/1445 (2023/2024)

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
Level 1	PHYS1010	General Physics (1)	----------	4	3	1	1	6
	MATH1050	Differential Calculus	----------	3	3	2	0	5
	ENGL1210	Reading Skills	----------	3	3	3	0	6
	ENGL1220	Writing Skills	----------	3	3	3	0	6
	IC101	Introduction to Islamic Culture	----------	2	2	0	0	2
				15	**14**	**9**	**1**	**25**
Level 2	ARAB101	Language Skills	--------	2	2	0	0	2
	MATH1060	Integral Calculus	MATH1050	3	3	2	0	5
	ENGL1230	Listening & Speaking Skills	--------	3	3	3	0	6
	CT1400	Computer Skills	--------	3	2	0	1	4
	MC1400	Communication Skills	--------	2	2	0	0	2
	ENGL1604	English for Technical Purposes	--------	3	3	3	0	6
				16	**15**	**8**	**1**	**25**
Level 3	CE1111	Logic Design	--------	3	3	1	0	4
	CS1112	Discrete Mathematics	--------	4	4	0	0	4
	CS1301	Computer Programming 1	--------	4	2	2	0	4
	MATH2220	Linear Algebra for Computer Students	--------	3	3	1	0	4
	IC102	The Islam and Society Building		2	2	0	0	2
				16	**14**	**4**	**0**	**18**
Level 4	PHYS1040	General Physics (2)	PHYS1010 + MATH1060	4	3	1	1	6
	CE2121	Logic Design Lab	CE1111	1	0	0	1	2
	CS2301	Computer Programming2	CS1301	4	2	2	0	4
	CS2321	Data Structures & Algorithms	CS1301	3	3	0	0	3
	IS2511	Fundamentals of Database Systems	--------	3	2	2	0	4
	MATH3310	Differential Equations for Computer Students	MATH1060	3	3	1	0	4
				18	**13**	**6**	**2**	**23**
Level 5	ARAB103	Arabic Editing	--------	2	2	0	0	2
	STAT1050	Probability and Statistics for Computer Students	CS1112	3	3	1	0	4
	CE2401	Computer Organization and Design	CE1111	3	3	0	0	3
	CE2501	Electrical Circuits	MATH3310	3	3	1	0	4

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
	CE3270	Number Theory	MATH2220	3	3	0	0	3
	CS3701	Operating Systems	CS2321	3	3	0	0	3
				17	**17**	**2**	**0**	**19**
Level 6	CE2511	Electrical Circuits Lab	CE2501	1	0	0	1	2
	CE3401	Computer Architecture	CE2401	3	3	0	0	3
	CE3411	Microprocessor Systems	CE2401	3	2	0	1	4
	CS3501	Introduction to Artificial Intelligence	CS2321	3	3	0	0	3
	CE3501	Electronic Circuits	CE2501	3	3	1	0	4
	CE3520	Signals Analysis and Systems	CE2501	3	3	0	0	3
	IC103	The Foundation of the Economic System in Islam	--------	2	2	0	0	2
				18	**16**	**1**	**2**	**21**
Level 7	SE2111	Foundations of Software Engineering	--------	3	3	0	0	3
	CS3001	Computing Ethics and Research Methods	Completion of 94 CHs	3	3	0	0	3
	CE3510	Electronic Circuits Lab	CE3501	1	0	0	1	2
	CE3541	Control Systems	CE3520	3	3	0	0	3
	CE3601	Digital Systems Design	CE2401	3	2	0	1	4
	CE3701	Data Communications	CE3520	3	2	0	1	4
	IC106	Prophet Biography	--------	2	2	0	0	2
				18	**15**	**0**	**3**	**21**
Level 8	CE3551	Control Systems Lab	CE3541	1	0	0	1	2
	CE3631	Embedded Systems Design	CE3411	3	2	0	1	4
	CE3711	Computer Networks	CE3701 + STAT1050	3	3	0	0	3
	SE4231	Software Project Management	SE2111	3	3	0	0	3
	CE4501	VLSI Design	CE3501	3	2	0	1	4
	CE4910	Graduation Project I	CS3001	2	2	0	0	2
	xxxx	Elective course 1	--------	3	3	0	0	3
				18	**15**	**0**	**3**	**21**
Level 9	CE3721	Computer Networks Lab	CE3711	1	0	0	1	2
	CE4711	Computer and Network Security	CE3711	3	3	0	0	3
	CE4801	Robotics and Automation	CS3501	3	2	0	1	4
	CE4921	Graduation Project II	CE4910	4	2	0	2	6
	xxxx	Elective course 2	--------	3	3	0	0	3
	xxxx	Elective course 3	--------	3	3	0	0	3
				17	**13**	**0**	**4**	**21**
Level 10	CE4901	Field Training	Completion of 140 CHs	3	0	0	3	6
				3	**0**	**0**	**3**	**6**

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
Total				156	132	30	19	200

Table A-2. Course Pre-requisite Chart (Required Courses)



Appendix B. Course Categories

Table B-1. Credit Hours by Subject Area and Depth of Study

Credit Hours	Subject Area	Course Groups and Depth of Study
29	General / Broad Education	• 16 credit hours of Language Skills (Arabic and English) • 8 credit hours of Islamic Culture • 5 credit hours of General Skills, including Computer Skills and Communication Skills
30	Mathematics and Basic Sciences	• 22 credit hours of Mathematics, including Discrete Mathematics, Probability, and Statistics • 8 credit hours of Science, consisting of Physics I and Physics II
15	Engineering Sciences	• 8 credit hours in Electrical and Electronic Circuits • 7 credit hours in Signals and Control Systems
29	Computing Sciences	• 20 credit hours in Programming, Operating Systems, Data Structures & Algorithms, Artificial Intelligence, and Ethical/Professional Practices • 6 credit hours in Software Engineering and Software Project Management • 3 credit hours in Database Systems
44	Computer Engineering	• 35 credit hours in Logic Design, Microprocessor Systems, Digital Systems Design, Computer Organization and Architecture, Embedded Systems Design, Data Communications, Computer Networks, Computer & Network Security, Robotics & Automation, and VLSI Design • 6 credit hours of Capstone Design (two-semester senior design project) • 3 credit hours of Industrial Training (8 weeks, 5 days/week, 8 hours/day)
9	Technical Electives	• Advanced courses primarily in Computer Engineering, with options in Computer Science and Software Engineering
156	**Total Program Credit Hours**	

Table B-2. General / Broad Education

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
Level 1	ENGL1210	Reading Skills	----------	3	3	3	0	6
	ENGL1220	Writing Skills	----------	3	3	3	0	6
	IC101	Introduction to Islamic Culture	----------	2	2	0	0	2
Level 2	ARAB101	Language Skills	--------	2	2	0	0	2
	ENGL1230	Listening & Speaking Skills	--------	3	3	3	0	6
	CT1400	Computer Skills	--------	3	2	0	1	4
	MC1400	Communication Skills	--------	2	2	0	0	2
	ENGL1604	English for Technical Purposes	--------	3	3	3	0	6
Level 3	IC102	The Islam and Society Building		2	2	0	0	2
Level 5	ARAB103	Arabic Editing	--------	2	2	0	0	2
Level 6	IC103	The Foundation of the Economic System in Islam	--------	2	2	0	0	2
Level 7	IC106	Prophet Biography	--------	2	2	0	0	2
Total				**29**	**28**	**12**	**1**	**42**

Table B-3. Mathematics and Basic Sciences

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
Level 1	PHYS1010	General Physics (1)	----------	4	3	1	1	6
	MATH1050	Differential Calculus	----------	3	3	2	0	5
Level 2	MATH1060	Integral Calculus	MATH1050	3	3	2	0	5
Level 3	CS1112	Discrete Mathematics	--------	4	4	0	0	4
	MATH2220	Linear Algebra for Computer Students	--------	3	3	1	0	4
Level 4	PHYS1040	General Physics (2)	PHYS1010 + MATH1060	4	3	1	1	6
	MATH3310	Differential Equations for Computer Students	MATH1060	3	3	1	0	4
Level 5	STAT1050	Probability and Statistics for Computer Students	CS1112	3	3	1	0	4
	CE3270	Number Theory	MATH2220	3	3	0	0	3
Total				**30**	**28**	**9**	**2**	**41**

Table B-4. Engineering Sciences

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
Level 5	CE2501	Electrical Circuits	MATH3310	3	3	1	0	4
Level 6	CE2511	Electrical Circuits Lab	CE2501	1	0	0	1	2
	CE3501	Electronic Circuits	CE2501	3	3	1	0	4
	CE3520	Signals Analysis and Systems	CE2501	3	3	0	0	3
Level 7	CE3510	Electronic Circuits Lab	CE3501	1	0	0	1	2
	CE3541	Control Systems	CE3520	3	3	0	0	3
Level 8	CE3551	Control Systems Lab	CE3541	1	0	0	1	2
Total				**15**	**12**	**2**	**3**	**20**

Table B-5. Computing Sciences

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
Level 3	CS1301	Computer Programming 1	--------	4	2	2	0	4
Level 4	CS2301	Computer Programming2	CS1301	4	2	2	0	4
	CS2321	Data Structures & Algorithms	CS1301	3	3	0	0	3
	IS2511	Fundamentals of Database Systems	--------	3	2	2	0	4
Level 5	CS3701	Operating Systems	CS2321	3	3	0	0	3
Level 6	CS3501	Introduction to Artificial Intelligence	CS2321	3	3	0	0	3
Level 7	SE2111	Foundations of Software Engineering	--------	3	3	0	0	3
	CS3001	Computing Ethics and Research Methods	Completion of 94 CHs	3	3	0	0	3
Level 8	SE4231	Software Project Management	SE2111	3	3	0	0	3
Total				**29**	**24**	**6**	**0**	**30**

Table B-6. Computer Engineering

Level	Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
					Lect.	Tut.	Lab.	
Level 3	CE1111	Logic Design	--------	3	3	1	0	4
Level 4	CE2121	Logic Design Lab	CE1111	1	0	0	1	2
Level 5	CE2401	Computer Organization and Design	CE1111	3	3	0	0	3
Level 6	CE3401	Computer Architecture	CE2401	3	3	0	0	3
	CE3411	Microprocessor Systems	CE2401	3	2	0	1	4
Level 7	CE3601	Digital Systems Design	CE2401	3	2	0	1	4
	CE3701	Data Communications	CE3520	3	2	0	1	4
Level 8	CE3631	Embedded Systems Design	CE3411	3	2	0	1	4
	CE3711	Computer Networks	CE3701 + STAT1050	3	3	0	0	3
	CE4501	VLSI Design	CE3501	3	2	0	1	4
	CE4910	Graduation Project I	CS3001	2	2	0	0	2
Level 9	CE3721	Computer Networks Lab	CE3711	1	0	0	1	2
	CE4711	Computer and Network Security	CE3711	3	3	0	0	3
	CE4801	Robotics and Automation	CS3501	3	2	0	1	4
	CE4921	Graduation Project II	CE4910	4	2	0	2	6
Level 10	CE4901	Field Training	Completion of 140 CHs	3	0	0	0	0
Total				**44**	**31**	**1**	**10**	**52**

Appendix C. Elective Courses

Table C-1. List of Selected Elective (SE) Courses

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
CE4981	Selected Topics	Dept Approval	4	4	0	0	4
CE4991	Research	Dept Approval	3	3	0	0	3
CE4521	Digital Signal Processing	CE3520	3	3	0	0	3
CE4531	Storage Media Technology	CE3401	3	3	0	0	3
CE4601	Reconfigurable Computing	CE3601	3	2	0	1	4
CE4721	Sensory Networks	CE3711	3	3	0	0	3
CE4740	Cloud Computing	CE3711	3	3	0	0	3
CE4751	Multimedia Networking	CE3711	3	3	0	0	3
CE4760	Mobile & Wireless Networks	CE3711	3	3	0	0	3
CS4201	Soft Computing	CS3501	3	3	0	0	3
CS4211	Simulation and Modeling	STAT1050	3	2	0	1	4
CS4301	Compiler Design	CS2321	3	3	0	0	3
CS4654	Digital Image Processing	CS2321	3	3	0	0	3
CS4851	Computer Networks Management	CE3711	3	3	0	0	3
SE4541	Advanced Software Engineering	SE2111	3	3	0	0	3
SE4551	Real Time Systems	CE3401	3	3	0	0	3
CS4731	Systems Programming & Administration	CS3701	3	2	0	1	4
CE4770	Internet of Things	CE3711	3	3	0	0	3
CE4561	Industrial Automation	CE3541	3	2	0	1	4
CE3421	High Performance Computing	CE2401	3	3	0	0	3

Table C-2. Equivalency-Recognized Elective (ERE) Courses

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
SE4981	Emerging Digital Technologies	-	2	2	0	0	2
CE2131	Computer Maintenance Lab	-	1	0	0	2	1
CS2401	Computation Theory	CS1112	3	3	0	0	3
MATH2540	Numerical Methods	MATH2220	3	3	0	0	3
CE 3001	Engineering Economics	SE2111	3	3	0	0	3
CS3101	Seminar in Undergraduate Advanced Research	-	2	2	0	0	2

Equivalency-Recognized Elective: A course completed under a previous study plan that has no direct equivalent in the current plan but is formally accepted as fulfilling elective credit requirements.

Table C-3. Digital Systems Concentration Area

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
CE4981	Selected Topics (digital-systems related)	Dept Approval	4	4	0	0	4
CE4991	Research (digital-systems related)	Dept Approval	3	3	0	0	3
CE4521	Digital Signal Processing	CE3520	3	3	0	0	3
CE4601	Reconfigurable Computing	CE3601	3	2	0	1	4
CS4211	Simulation and Modeling	STAT1050	3	2	0	1	4
CS4654	Digital Image Processing	CS2321	3	3	0	0	3
CE4561	Industrial Automation	CE3541	3	2	0	1	4
CE3421	High Performance Computing	CE2401	3	3	0	0	3

Table C-4. Network Systems Concentration Area

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
CE4981	Selected Topics (network-related)	Dept Approval	4	4	0	0	4
CE4991	Research (network-related)	Dept Approval	3	3	0	0	3
CE4721	Sensory Networks	CE3711	3	3	0	0	3
CE4740	Cloud Computing	CE3711	3	3	0	0	3
CE4751	Multimedia Networking	CE3711	3	3	0	0	3
CE4760	Mobile & Wireless Networks	CE3711	3	3	0	0	3
CS4851	Computer Networks Management	CE3711	3	3	0	0	3
CE4770	Internet of Things	CE3711	3	3	0	0	3

Table C-5. Intelligent Systems Concentration Area

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
CE4981	Selected Topics (AI/ML/automation related)	Dept Approval	4	4	0	0	4
CE4991	Research (AI/ML/automation related)	Dept Approval	3	3	0	0	3
CE4521	Digital Signal Processing	CE3520	3	3	0	0	3
CE4721	Sensory Networks	CE3711	3	3	0	0	3
CS4654	Digital Image Processing	CS2321	3	3	0	0	3
CS4201	Soft Computing	CS3501	3	3	0	0	3
CS4211	Simulation and Modeling	STAT1050	3	2	0	1	4
CE4770	Internet of Things	CE3711	3	3	0	0	3

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
CE4561	Industrial Automation	CE3541	3	2	0	1	4

Table C-6. Storage Systems Concentration Area

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
CE4981	Selected Topics (storage-related)	Dept Approval	4	4	0	0	4
CE4991	Research (storage-related)	Dept Approval	3	3	0	0	3
CE4531	Storage Media Technology	CE3401	3	3	0	0	3
CE4740	Cloud Computing	CE3711	3	3	0	0	3
CS4731	Systems Programming & Administration	CS3701	3	2	0	1	4
CE3421	High Performance Computing	CE2401	3	3	0	0	3

Table C-6. Software Systems Concentration Area

Course Code	Course Title	Pre-Requisite Courses	Credit Hours	Distribution			Actual Hours
				Lect.	Tut.	Lab.	
CE4981	Selected Topics (software-related)	Dept Approval	4	4	0	0	4
CE4991	Research (software-related)	Dept Approval	3	3	0	0	3
CE4740	Cloud Computing	CE3711	3	3	0	0	3
CS4201	Soft Computing	CS3501	3	3	0	0	3
CS4211	Simulation and Modeling	STAT1050	3	2	0	1	4
CS4301	Compiler Design	CS2321	3	3	0	0	3
SE4541	Advanced Software Engineering	SE2111	3	3	0	0	3
SE4551	Real Time Systems	CE3401	3	3	0	0	3
CS4731	Systems Programming & Administration	CS3701	3	2	0	1	4

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