



ACCRA INSTITUTE OF TECHNOLOGY

The University of the Future

DEGREE PROGRAMS OUTLINE

**Advanced School of Systems and Data Studies (ASSDAS)**

**Bachelor of Science (BSc), Information Technology (IT)**  
**Semester-based Layout of the Program**

PROGRAM				Information Technology	QUALIFICATION		BSc	
YEAR 1								
Semester 1				Semester 2				
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.	
IT101	Information Technology Foundation 1	-	3	IT102	Information Technology Foundation 2	IT101	3	
MATH101	Intermediate Algebra	-	3	MATH102	Calculus I	MATH101 MATH100	3	
CS103	Principles of Programming with C++	-	3	CS104	Object Oriented Programming with Java	CS103	3	
PHY101	Physics I	-	3	IT103	Information Systems	-	3	
MGT101	Principles of Management	-	3	ENGL102	English Composition and Writing Skills II	ENGL101	2	

ENGL101	English Composition, Writing & Communication Skills I	-	2		IT109	Multimedia Applications Systems Development I	-	1
<b>Sub-Total</b>			<b>17</b>		<b>Sub-Total</b>			<b>15</b>

**YEAR 2**

<b>Semester 3</b>				<b>Semester 4</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
FRN101	French I	-	3	FRN102	French II	FRN101	3
IT201	Multimedia Applications Systems Development II	IT109	3	MATH202	Probability & Statistics	MATH102	3
CS203	Data Structures & Algorithm I	CS104	3	CS209	Systems Programming	CS202	3
CS205	Computer Org & Architecture I	CS102	3	CS204	Data Structures & Algorithms II	CS203	3
IT204	Web Authoring & Content Management	IT102	3	CS208	Data Communications & Computer Networks I	-	3
NT201	Group Dynamics & Communications	-	2	IT205/ IT230/  IT232/ IT233/ SE100	IT Professional Ethics/ Multimedia Technologies/ Web Applications: Client Side Scripting/ Business Analysis/ Software Engineering Fundamentals	-/ IT102, IT204/ IT204/ MGT201/ -/	2/  3
<b>Sub-Total</b>			<b>17</b>	<b>Sub-Total</b>			<b>18</b>

**YEAR 3**

<b>Semester 5</b>				<b>Semester 6</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
MS101	Fundamentals of Management Science	MATH202	3	CS303	Computer Graphics	MATH101 CS202	3
CS304	Operating Systems	MATH201 CS202	3	IT302	IT Project Planning & Management	-	3
CS309	Systems Analysis & Design: Principles and Practice	-	3	CS310	Principle of Compiler Design and Construction	CS204	3
CS311	Database Systems I	CS203	3	CS312	Database Systems II	CS311	3

IT301/ IT330/ IT335/ IT337/ IT234/	Network Administration & Management / Design for Interactive Multimedia I/ Document Markup Languages/ E-Commerce Technologies/ Software Development Methodologies	CS208/ IT230/ IT232/ -/ SE100	3		IT303/ IT334/ IT340	Knowledge-Based Information Systems/ Digital Communication Systems/ Formal Methods in Software Development	-/ PHY101/ IT234	3
NT301/ IT331/ IT333/ IT338/ IT431	Law and Society/ Digital Video and Audio/ LAN to WAN Internet-working/ Secure Electronic Commerce/ Multimedia User-Interface Design	-/ IT230/ CS208/ -/CS303	3		IT304/ IT332/ IT336/ IT339/	Intro to Information & Network Security/ Design for Interactive Multimedia II/ Web Database Applications/ E-Commerce & Enterprise Systems/	CS208 IT301/ IT330/ CS311/ IT338	3
<b>Sub-Total</b>			<b>18</b>		<b>Sub-Total</b>			<b>18</b>
<b>YEAR 4</b>								
<b>Semester 7</b>				<b>Semester 8</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>		<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CS401	Computer Modelling & Simulation	MATH201	3		CS403/ IT435/ IT437/ IT437	Software Engineering Practice/ Virtual Private Network (VPN)/ E-Commerce Systems/ E-Commerce Systems/	CS402/ IT410, IT333/ IT430	3
CS402/ IT440	Software Engineering Fundamentals/Open Source Software Development: Principles & Practice	CS104 / IT340	3		IT404	E-Applications & Systems	-	3
IT401/ IT430/ IT410/ IT430/ IT430/	Web Technologies and Systems/ Information and Network Security, Firewalls & VPNs/ Information & Network Security II/ Information and	-/ CS208/ IT304/ CS208/	3		IT433/ TE401/ IT433/	Imaging and Animation/ Satellite & Space Communications/	CS303/ TE303/ CS303/	3

IT442	Network Security, Firewalls & VPNs/ Information and Network Security, Firewalls & VPNs/ Managing Software Dev	CS208/ IT234, CS310/			IT401/ IT441	Imaging and Animation/ Web Technologies and Systems/ Web-based Applications Development	IT204/ IT401	
IT402/ IT431/ IT434/ IT434/ IT438/ IT443	Advanced Database System Administration/ Multimedia User-Interface Design/ Web Servers, Technologies and Administration/ Web Servers, Technologies and Administration/ E-Commerce Entrepreneurship and Venture/ Unified Modelling Language (UML)	CS312/ CS303, IT332/ IT301/ IT301/ MGT201, IT339/ IT340	3		ITxxx	Elective 1		3
IT403/ IT432/ TE303/ IT456/ IT439	Human Computer Interaction/ Digital Video and Motion Graphics/ Wireless & Mobile Com Networks & Technologies / Web 3D Technologies/ E-Commerce in a Global Environment	CS310/ CS303, IT332/ IT334/ IT336/ IT339			ITxxx	Elective 2		3
IT405	Capstone Project I		3		IT406	Capstone Project II	IT405	3
	<b>Sub-Total</b>		<b>18</b>			<b>Sub-Total</b>		<b>18</b>
<b>TOTAL CREDIT HOURS</b>						<b>139</b>		

### ELECTIVES

Course Code	Course Title	Prereq	Credit Hrs.		Course Code	Course Title	Prereq	Credit Hrs.
IT410	Information Network Security II	IT304	3		IT452	Distributed Information Systems	IT402	3
IT450	Computer Animation	CS303	3		IT453	Network Technology and Service Integration	IT301	3
IT451	Computer Vision	CS303	3		IT454	Information Security Audit & Computer Forensics	IT304	3
IT465	E-Commerce System Development	IT437	3		IT458	Advanced 3D Imaging and Animation	IT433	3
IT456	Web 3D Technologies	IT332 IT431	3		IT459	Visual Design Theory & Interactive Communication Design	IT457	3
IT457	Advanced Multimedia and Authoring	IT332	3		IT464	Modern Wireless Communications	TE303	3
IT460	Advanced Network Routing and Switching	IT333	3		IT462	Hacker Techniques, Tools and Incident Handling	IT410	3
IT461	Mobile Applications Development	TE303	3		IT463	Network Technology and Service Integration	IT301	3
TE452	Wireless Network Planning	IT461, TE303	3		TE455	WiMAX Networks	TE452	3
IT402	Advanced Database System Administration	CS312	3		IT502	Intellectual Property and E-Commerce	IT439	3
IT441	Web-based Application Systems Development	IT401	3		IT503	Topics in E-Commerce and Development	IT439	3
IT452	Distributed Information Systems	IT402	3		IT504	Advanced Electronic Commerce Management	IT439	3
IT500	Enterprise Application Integration: Principles & Practice	IT442	3		IT501	Advanced Software Engineering	IT340	3



**ACCRA INSTITUTE OF TECHNOLOGY**

**The University of the Future**

**Advanced School of Systems and Data Studies (ASSDAS)**

**Bachelor of Science (BSc), Computer Science**  
**Semester-based Layout of the Program**

PROGRAM		Computer Science		QUALIFICATION		BSc	
YEAR 1							
Semester 1				Semester 2			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS101	Computer Science 1	-	3	CS102	Computer Science 2	CS101	3
MATH104	Engineering Mathematics I	-	3	MATH105	Engineering Mathematics II	MATH104	3
CS103	Principles of Programming with C++	-	3	CS104	Object Oriented Programming with Java	CS103	3
ENG102	Engineering Science	-	3	NT182	Engineering & Computing Ethics & Society	-	2
ENG101	Intro to Engineering	-	3	ENG104	Basic Electricity & Electronics	ENG102	3
ENGL101	English Composition, Writing & Communication Skills I	-	2	ENGL102	English Composition, Writing & Communication Skills II	ENGL101	2
ENG107	Engineering Practicum		1	ENG108	Engineering Lab 1	ENG107	1
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>17</b>

YEAR 2							
Semester 3				Semester 4			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
MATH201	Engineering Mathematics III	MATH105	3	MATH202	Engineering Statistics	MATH105	3
CS203	Data Structure & Algorithm I	CS104	3	CS209	Systems Programming	CS202	3
CS205	Computer Org & Architecture I	CS102	3	CS204	Data Structures & Algorithms II	CS203	3
CE201	Digital Logic Design	CS102	3	CS206	Computer Org & Architecture II	CS205	3
CS208	Data Communications & Computer Networks I	-	3	CS210	Data Communications & Computer Networks II	CS208	3
NT201	Group Dynamics & Communications	-	2	NT202	Social & Ethics in Computer Science and Engineering	-	2
<b>Sub-Total</b>			<b>17</b>	<b>Sub-Total</b>			<b>17</b>
YEAR 3							
Semester 5				Semester 6			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS301	AI and Expert Systems I	-	3	MATH302	Operations Research	MATH105	3
CS306	Computer Architecture Laboratory	CS206	1	CS308	Computer Vision	CS303	3
CS304	Operating Systems	MATH201 CS202	3	CS305	AI and Expert Systems II	MATH201	3
CS309	Systems Analysis & Design: Principles and Practice	-	3	CS310	Principles of Compiler Design and Construction	CS204	3
CS311	Database Systems I	-	3	CS312	Database Systems II	CS311	3
CS303	Computer Graphics	MATH105 CS202	3	CS313	Computer Security I	MATH201 CS308	3
NT301	Law and Society	-	2				
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>18</b>

YEAR 4							
Semester 7				Semester 8			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS401	Computer Modelling & Simulation	MATH201	3	CS403	Software Engineering Practice	CS402	3
CS402	Software Engineering	CS104	3	CS409	Computer Animation	CS303	3
CS407	Web-Based Application Systems Development	-	3	CS410	Entrepreneurship in Computing	-	3
CS408	Human Computer Interaction	CS310	3	CSxxx	Elective 1		3
CS404	Computer Security II	CS313	3	CSxxx	Elective 2		3
CS405	Capstone Project I		3	CS406	Capstone Project II	CS405	3
	<b>Sub-Total</b>		<b>18</b>		<b>Sub-Total</b>		<b>18</b>
<b>TOTAL CREDIT HOURS</b>						<b>141</b>	

ELECTIVES							
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS450	Advanced Computer Architecture	CS206		CS452	Advanced Computer Graphics	CS408	3
CE303	Embedded Microprocessor Systems	CS206		CS453	Advanced AI & Expert Systems	CS305	3
CE306	Software for Embedded Systems	CE303		CS454	Enterprise Application Integration: Principles and Practices	CS407	3
CS456	Advanced System Analysis and Design	CS309		CS455	Advanced Topics in Software Engineering	CS403	3





**ACCRA INSTITUTE OF TECHNOLOGY**

**The University of the Future**

**The AIT Business School (ABS)**

**Bachelor of Science (BSc), Business Administration**  
**Semester-based Layout of the Program**

PROGRAM				QUALIFICATION			
Business Administration (Accounting and Finance)				BSc			
YEAR 1							
Semester 1				Semester 2			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
IT101	Information Technology I	-	3	IT103	Information Systems	IT101	3
MATH101	Intermediate Algebra	-	3	MATH107	Business Mathematics and Statistics I	MATH101 MATH100	3
ECON101	Microeconomics		3	MGT201	Introduction to Entrepreneurship	MGT101	3
ACCT101	Principles of Accounting I		3	ECON102	Macroeconomics	ECON101	3
MGT101	Principles of Management	-	3	ACCT201	Principles of Accounting II	ACCT101	3
ENGL101	English Composition, Writing & Communication Skills I	-	3	FRN101	French I	-	3
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>18</b>

YEAR 2							
Semester 3				Semester 4			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
MATH203	Business Mathematics and Statistics II	MATH107	3	MS101	Fundamentals of Management Science	MATH203	3
MGT301	Introduction to Public Administration	-	3	FIN101	Principles of Finance	-	3
MKT201	Principles of Marketing	-	3	MGT203	Business Law	MGT101	3
HRM201	Introduction to Human Resource Management	MGT101	3	MGT204	Business, Government and Society	-	3
IT206	Information Technology Practice	IT103	1	CS208	Data Communications & Computer Networks I	IT201	3
FRN102	French II	FRN101	3	BNT201	Business and Professional Ethics	-	3
NT201	Group Dynamics & Communications	-	2				
	<b>Sub-Total</b>		<b>18</b>		<b>Sub-Total</b>		<b>18</b>
YEAR 3							
Semester 5				Semester 6			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
FIN201	Business Finance	FIN101	3	ACCT502	Intermediate Accounting II	ACCT501	3
ACCT501	Intermediate Accounting I	ACCT201	3	ACCT503	Cost Accounting	ACCT501	3
MGT302	Company Law		3	BAFN501	Investment Management	FIN201 MATH203	3
MGT303	Production and Operations Management	-	3	MGT305	International Business Management	-	3
MGT304	Organizational Behavior	MGT101	3	MGT306	Research Methods		3
BNT301	Business Problem Solving	-	2	BNT302	Exploring the Future of Business	-	2
	<b>Sub-Total</b>		<b>17</b>		<b>Sub-Total</b>		<b>17</b>

YEAR 4							
Semester 7				Semester 8			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
BAFN503	Money and Capital Markets	FIN201	3	ACCT506	Principles of Taxation	ACCT201	3
ACCT505	Auditing Principles and Practice	ACCT201	3	BAFN510	Management of Financial Institutions	BAFN503	3
BAFN506	Risk Management & Insurance	ACC201 MATH203	3	ACCT513	Computerized Accounting Systems	ACCT201 MATH203 IT206	3
BAFN508	Fundamentals of Building Wealth	FIN201	3	MGT404	Business Policy	-	3
MGT403	Project Management	MGT202	3	MGT407	Procurement Management	MGT202	3
MGT405	Capstone Project I	-	3	MGT406	Capstone Project II	MGT405	3
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>18</b>
<b>TOTAL CREDIT HOURS</b>				<b>142</b>			

PROGRAM		Business Administration (E-Commerce)		QUALIFICATION		BSc	
<b>YEAR 1</b>							
<b>Semester 1</b>				<b>Semester 2</b>			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
IT101	Information Technology I	-	3	IT103	Information Systems	IT101	3
MATH101	Intermediate Algebra	-	3	MATH107	Business Mathematics and Statistics I	MATH101 MATH100	3
ECON101	Microeconomics		3	MGT201	Introduction to Entrepreneurship	MGT101	3
ACCT101	Principles of Accounting I		3	ECON102	Macroeconomics	ECON101	3
MGT101	Principles of Management	-	3	ACCT201	Principles of Accounting II	ACCT101	3
ENGL101	English Composition, Writing & Communication Skills I	-	3	FRN101	French I	-	3
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>18</b>
<b>YEAR 2</b>							
<b>Semester 3</b>				<b>Semester 4</b>			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
MATH203	Business Mathematics and Statistics II	MATH107	3	MS101	Fundamentals of Management Science	MATH203	3
IT204	Web Authoring and Content Management	-	3	FIN101	Principles of Finance	-	3
MKT201	Principles of Marketing	-	3	MGT203	Business Law	MGT101	3
HRM201	Introduction to Human Resource Management	MGT101	3	ECOM205	Web Applications Development: JavaScript Programming	IT204	3
IT206	Information Technology Practice	IT103	1	CS208	Data Communications & Computer Networks I	IT201	3
FRN102	French II	FRN101	3	BNT201	Business and Professional Ethics	-	3
NT201	Group Dynamics & Communications	-	2				
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>18</b>

YEAR 3							
Semester 5				Semester 6			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
ECOM301	Database Concepts and Technology	ECOM205	3	ECOM502	IT Infrastructure of E-Commerce	ECOM501	3
ECOM501	Electronic Commerce Systems	IT102	3	ECOM503	E-Commerce Technologies	IT102	3
MIS502	Management Information Systems	IT102	3	ECOM504	Managing E-Commerce in Organizations	ECOM501	3
MGT303	Production and Operations Management	MS101	3	MGT305	International Business Management	-	3
MGT304	Organizational Behavior	MGT101	3	MGT306	Research Methods		3
BNT301	Business Problem Solving	-	2	BNT302	Exploring the Future of Business	-	2
<b>Sub-Total</b>			<b>17</b>	<b>Sub-Total</b>			<b>17</b>
YEAR 4							
Semester 7				Semester 8			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
ECOM507	E-Commerce Accounting	ECOM501, ACCT201, MATH203	3	ECOM510	E-Commerce Entrepreneurship and Venture	MGT201, ECOM501, EOM502	3
MKT504	Marketing Channels	MKT201	3	ECOM511	Topics in E-Commerce and Development	ECOM501, ECOM502	3
ECOM505	Knowledge Management	ECOM501, ECOM502	3	ECOM512	Advanced Electronic Commerce Management	ECOM509	3
ECOM509	Secure E-Commerce	ECOM501, ECOM502, CS208	3	MKT510	Web Marketing	MKT201, MKT502	3
MGT403	Project Management	MGT202	3	MGT407	Procurement Management	MGT202	3
MGT405	Capstone Project I	-	3	MGT406	Capstone Project II	MGT405	3
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>18</b>
<b>TOTAL CREDIT HOURS</b>					<b>142</b>		



**ACGRA INSTITUTE OF TECHNOLOGY**

**The University of the Future**

**School of Advanced Technologies, Engineering and Science (SATES)**

**Engineering Foundation Year (EFY)**  
**Semester-based Layout of the Program**

PROGRAM				QUALIFICATION			
CE, EEE, TE, CVE, EME, IE				BEng (Honours)			
YEAR 1							
Semester 1				Semester 2			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS101/ IT101	Computer Science I <u>or</u> Information Technology I	-	3	CS102 IT102	Computer Science II <u>or</u> Information Technology II	CS101/ IT101	3
MATH104	Engineering Mathematics I	-	3	MATH105	Engineering Mathematics II	MATH104	3
CS103	Principles of Programming with C++	-	3	NT182	Engineering & Computing Ethics & Society	-	2
ENG102	Engineering Science	-	3	CS104	Object Oriented Programming with Java	CS103	3
ENG101	Intro to Engineering	-	3	ENG104	Basic Electricity & Electronics	ENG102	3
ENG107	Engineering Practicum	-	1	ENG108	Engineering Lab 1	ENG107	1
ENGL101	English Composition, Writing & Communication Skills I	-	2	ENGL102	English Composition, Writing & Communication Skills II	ENGL101	2
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>17</b>



**ACGRA INSTITUTE OF TECHNOLOGY**

**The University of the Future**

**School of Advanced Technologies, Engineering and Science (SATES)**

**Bachelor of Engineering (BEng), Computer Engineering**  
**Semester-based Layout of the Program**

PROGRAM		Computer Engineering		QUALIFICATION		BEng (Honours)	
YEAR 1							
Semester 1				Semester 2			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS101	Computer Science I	-	3	CS102	Computer Science II	CS101	3
MATH104	Engineering Mathematics I	-	3	MATH105	Engineering Mathematics II	MATH104	3
CS103	Principles of Programming with C++	-	3	NT182	Engineering & Computing Ethics & Society	-	2
ENG102	Engineering Science	-	3	CS104	Object Oriented Programming with Java	CS103	3
ENG101	Intro to Engineering	-	3	ENG104	Basic Electricity & Electronics	ENG102	3
ENG107	Engineering Practicum	-	1	ENG108	Engineering Lab 1	ENG107	1
ENGL101	English Composition, Writing & Communication Skills I	-	2	ENGL102	English Composition, Writing & Communication Skills II	ENGL101	2
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>17</b>

YEAR 2							
Semester 3				Semester 4			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
MATH201	Engineering Mathematics III	MATH105	3	MATH202	Engineering Statistics	MATH201	3
CS203	Data Structure & Algorithm I	CS104	3	CS204	Data Structures & Algorithms II	CS203	3
CS205	Computer Org & Architecture I	CS102	3	CS206	Computer Org & Architecture II	CS205	3
CE201/ CE202	Digital Logic Design/ Digital Logic Design Lab.	CS102	2 1	ENG201	Fundamentals of Engineering Design	-	3
CE203/ CE204	Engineering Circuit Analysis Circuit Analysis Laboratory	ENG104	2 1	ENG203	Health & Safety Issues in Engineering	-	2
ENG233	Engineering Perspectives and Skills	-	2	ENG208	Engineering Lab 3 – Digital Technology Lab	ENG207	1
FRN201	French 1	-	2	FRN202	French II	FRN201	3
ENG207	Engineering Lab 2	ENG108	1				
<b>Sub-Total</b>			<b>19</b>	<b>Sub-Total</b>			<b>18</b>
YEAR 3							
Semester 5				Semester 6			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS306	Computer Architecture Lab	CS206	1	MATH302	Operations Research I	MATH105	3
CS311	Database Systems I	MATH201 CS203	3	CE305	VLSI Design OR Microprocessors I & II	CE301	3
CE301/ CE302	Electronic Device & Circuits Electronics Laboratory	CE203	2 1	CS304	Operating Systems	MATH201 CS202	3
CE303/ EEE30 3	Embedded Microprocessor Systems OR Communications Systems I	CS206	3	CS312	Database Systems II	CS311	3
CE304	Systems and Signals	MATH201	3	CE306	Software for Embedded Sys	CE303	3
NT302	Engineering & Computing Ethics & Society	-	2	ENG308	Engineering Lab 5 – Automation Technology Lab	ENG307	1



ENG307	Eng Lab 4 -Microcomputer Tech Lab	ENG208	1				
<b>Sub-Total</b>			<b>16</b>		<b>Sub-Total</b>		<b>16</b>
<b>YEAR 4</b>							
<b>Semester 7</b>				<b>Semester 8</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CS401	Computer Modelling_& Simulation	MATH201	3	ENG401	Quality & Reliability Engineering		3
CE401	Computer & Electronic System Engineering		3	CS403	Software Engineering Practice	CS402	3
CS402	Software Engineering	CS102 CS104	3	CE403/ EEE304/ EEE456	Analog & Digital Signal Processing OR Communications Systems II OR Fiber Optics Communcations	CE304	3
ENG301	Engineering Project Management	MATH302	2	IE401 /ENG303	Product Design & Development  OR Engineering Design in Production Operations		3
CExxx	Elective 1		3	CExxx	Elective 2		3
ENG407	Engineering Lab 6 – Communications Technology 1 Lab		1	CE406	Capstone Project II	CE405	3
CE405	Capstone Project I		3				
<b>Sub-Total</b>			<b>18</b>	<b>Sub-Total</b>			<b>18</b>
<b>TOTAL CREDIT HOURS</b>					<b>142</b>		

<b>ELECTIVES</b>							
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
IE305	Computer-Aided Manufacturing (CAM)		3	IT452	Distributed Information Systems		3
ENG407	Management for Engineers		3	CE470	Communication Electronics VLSI Based Design	CS401	3
CS313	Computer Security		3	CS450	Advanced Computer Architecture	CS206	3

CS308	Data Communications and Networks	CS208	3				
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**ACCRA INSTITUTE OF TECHNOLOGY**

**The University of the Future**

**School of Advanced Technologies, Engineering and Science (SATES)**

**Bachelor of Engineering (BEng), Electrical and Electronic Engineering**

PROGRAM				QUALIFICATION			
Electrical and Electronic Engineering				BEng (Honours)			
YEAR 1							
Semester 1				Semester 2			
Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
CS101	Computer Science I	-	3	CS102	Computer Science II	CS101	3
MATH104	Engineering Mathematics I	-	3	MATH105	Engineering Mathematics II	MATH104	3
CS103	Principles of Programming with C++	-	3	NT182	Engineering & Computing Ethics & Society	-	2
ENG102	Engineering Science I	-	3	CS104	Object Oriented Programming with Java	CS103	3
ENG101	Intro to Engineering	-	3	ENG104	Basic Electricity & Electronics	ENG102	3

ENG107	Engineering Practicum	-	1		ENG108	Engineering Lab 1	ENG107	1
ENGL101	English Composition, Writing & Communication Skills I	-	2		ENGL102	English Composition, Writing & Communication Skills II	ENGL101	2
<b>Sub-Total</b>			<b>18</b>		<b>Sub-Total</b>			<b>17</b>

## YEAR 2

<b>Semester 3</b>				<b>Semester 4</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
MATH201	Engineering Mathematics III	MATH105	3	MATH202	Engineering Statistics	MATH201	3
CE201	Digital Logic Design/	CS102	2	EEE204	Field Theory	MATH105	3
CE202	Digital Logic Design Lab		1			ENG103	
CE203	Circuit Theory/	ENG104	2	EEE202	Physical Electronics	ENG103	3
CE204	Circuit Analysis Lab		1				
ENG201	Fundamentals of Engineering Design	-	3	EEE203	Signals and Systems	MATH105 CE203	3
ENG207	Engineering Lab 2: Digital Electronic Instrumentation Measurement	ENG108	1	ENG208	Engineering Lab 3 – Electrical Engineering Lab	ENG207	1
ENG233	Engineering Perspectives and Skills	-	2	ENG203	Health & Safety Issues in Engineering	-	2
FRN201	French I		2	FRN202	French II	-	2
<b>Sub-Total</b>			<b>17</b>	<b>Sub-Total</b>			<b>17</b>

## YEAR 3

<b>Semester 5</b>				<b>Semester 6</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
ENG204	Properties of Engineering Materials		3	MATH302	Operations Research	MATH105	3
EEE301	Electromagnetic Theory	EEE204	3	EEE304	Communication Systems II	EEE303	3
CE301	Electronic Device & Circuits/	CE203	2	EEE305	Electrical Energy Conversion	EEE204	3
CE302	Electronics Lab		1				
EEE302	Classical Control Systems	EEE203	3	EEE306	Microprocessor I & II	CE201	3
EEE303	Communication Systems I	EEE203	3	EEE307	Modern Control Systems	EEE302	3

ENG307	Engineering Lab 4 – Electronic Engineering Lab	ENG208	1		ENG303	Engineering Design in Production Operations	ENG201	3
					ENG308	Engineering Lab 5 – Electrical Machines Lab	ENG307	1
<b>Sub-Total</b>			<b>18</b>		<b>Sub-Total</b>			<b>19</b>
<b>YEAR 4</b>								
<b>Semester 7</b>					<b>Semester 8</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>		<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CS401	Computer Modelling & Simulation	MATH201	3		ENG401	Quality & Reliability Engineering		3
ENG304	Engineering Graphics	MATH105	3		EEE403 or EEE407	Digital Signal Processing or Adv. Electrical Energy Conversion	EEE203 EEE204	3
EEE401 EEE409	Power System Analysis I or Microwave Theory and Design	EEE305 EEE301	3		EEE408 Or EEE410	Power System Analysis II Or Microwave Applications	EEE401 EEE409	3
EEE402	CMOS IC System	CE201 CE301	3		EEExxx	Elective 1		3
ENG331	Engineering Project Management	MATH302	2		EEExxx	Elective 2		3
ENG 407	Engineering Lab 6 – Power Electronics Lab	ENG308	1					
EEE405	Capstone Project I		3		EEE406	Capstone Project II	EEE405	3
<b>Sub-Total</b>			<b>18</b>		<b>Sub-Total</b>			<b>18</b>
<b>TOTAL CREDIT HOURS</b>					<b>142</b>			

## ELECTIVES

Course Code	Course Title	Prereq	Credit Hrs.	Course Code	Course Title	Prereq	Credit Hrs.
EEE450	Introduction to Robotics	MATH105	3	EEE454	Advanced Power System Control	EEE307	3
EEE451	Digital Control Systems	EEE302	3	EEE457	Computer Methods in Power Systems	MATH105, EEE401	3
EEE452	Renewable Energy-Photovoltaics	EEE202	3	EEE458	Power System Economics	MATH302	3
EEE453	Laser Theory & Applications	EEE103	3	EEE459	Large Electric Energy Systems Analysis	EEE305	3
EEE455	Wireless Communications	EEE304	3	EEE460	Solar Cells: Theory and Applications	ENG102	3
EEE456	Fiber-optic Communications	EEE301	3	EEE461	Modern Petroleum Production Systems	MATH 302	3
UKEC405	Electrical Energy Systems	EEE305	3	EEE462	Special Topics in Electrical Energy Systems	-	3
CE401/ UKEC410	Electronic System Engineering	CE301	3	EEE463	Special Topics in Electronic Engineering Systems	-	3

PROGRAM	Civil Engineering	QUALIFICATION	BEng			
<b>YEAR 1 SEMESTER 1</b>						
Course Code	Course Title	PREQ	T	P	C	
IT101	Information Technology Foundation I	-	1	2	2	
MATH104	Engineering Mathematics I: Algebra & Calculus I	-	4	0	4	
CS103	Principles of Programming With C++	-	1	2	2	
CVE103	Elementary Structures	-	2	2	3	
ENG102	Engineering Science	-	2	2	3	
CVE104	Technical Drawing	-	1	3	2	
ENGL101	English Composition, Writing & Communication Skills I	-	2	0	2	
			<b>13</b>	<b>11</b>	<b>18</b>	
<b>YEAR 1 SEMESTER 2</b>						
Course Code	Course Title	PREQ	T	P	C	
MATH105	<b>Engineering Mathematics II: Algebra &amp; Calculus 2</b>	MATH104	4	0	4	
CVE102	Civil Engineering Materials	-	1	2	2	
CVE106	Elementary Fluid Mechanics	-	2	2	3	
CVE105	Civil Engineering Drawing	-	1	3	2	
NT182	Engineering & Computing Ethics & Society	-	2	0	2	
ENGL102	English Composition, Writing & Communication Skills II	ENGL101	2	0	2	
IT102	Information Technology Foundation 2	IT101	1	2	2	
			<b>13</b>	<b>11</b>	<b>17</b>	
<b>YEAR 2 SEMESTER 3</b>						
Course Code	Course Title	PREQ	T	P	C	
MATH201	Engineering Mathematics III: Discrete Maths & Numerical Methods	MATH105	4	0	4	
CVE201	Introduction to Environmental Engineering	ENG102	2	2	3	
ENG201	Foundations of Engineering Design	MATH105	2	2	3	
CVE 202	Large Scale Surveying	MATH105	2	3	3	
CVE 203	Physical Geology	ENG102	2	1	2	
ENGL201	Literature in English	ENGL102	2	0	2	

			<b>14</b>	<b>8</b>	<b>17</b>
<b>YEAR 2 SEMESTER 4</b>					
<b>Course Code</b>	<b>Course Title</b>	<b>PREQ</b>	<b>T</b>	<b>P</b>	<b>C</b>
MATH202	Engineering Statistics	<b>MATH201</b>	4	0	4
CVE205	Fluid Mechanics (Intermediate)	ENG102, CVE106	2	2	3
CVE206	Engineering Hydrology	-	2	0	2
CVE207	Theory of Structures	-	3	0	3
CVE208	Mechanics of Materials	ENG102	2	1	2
CVE209	Soil and Rock Mechanics	ENG102	2	2	3
			<b>15</b>	<b>5</b>	<b>17</b>
<b>YEAR 3 SEMESTER 5</b>					
<b>Course Code</b>	<b>Course Title</b>	<b>PREQ</b>	<b>T</b>	<b>P</b>	<b>C</b>
MATH302	Operations Research	MATH104	3	0	3
CVE301	Structural Analysis	CVE207 CVE208	3	0	3
CVE302	Reinforced Concrete Design	-	2	2	3
CVE303	Transportation Planning & Engineering	ENG102	2	0	2
CVE312	Soil Mechanics	CVE209	2	2	3
CVE305	Engineering Surveying	CVE202	2	3	3
			<b>14</b>	<b>7</b>	<b>17</b>
<b>YEAR 3 SEMESTER 6</b>					
<b>Course Code</b>	<b>Course Title</b>	<b>PREQ</b>	<b>T</b>	<b>P</b>	<b>C</b>
ENG304	Engineering Graphics & Computer Aided Design	MATH105	1	2	2
CVE310	Civil Engineering Quantities	-	2	1	2
CVE307	Highway Engineering	-	2	2	3
CVE308	Design of Steel and Timber Structures	CVE301	3	0	3
CVE309	Foundation Engineering	-	2	2	3
CVE304	Hydraulic Engineering	ENG102	2	2	3



CVE311	Integrated Design Project	-	0	4	2
			<b>12</b>	<b>13</b>	<b>18</b>
<b>YEAR 4 SEMESTER 7</b>					
<b>Course Code</b>	<b>Course Title</b>	<b>PREQ</b>	<b>T</b>	<b>P</b>	<b>C</b>
CS401	Computer Modelling & Simulation	MATH201	2	2	3
CVE401	Construction Management for Engineers		3	0	3
CVExxx	Technical Elective I		3	0	3
CVExxx	Technical Elective II		3	0	3
CVExxx	Technical Elective III		3	0	3
CVE405	Capstone Project I (Civil Engineering Design Project)		0	6	3
			<b>14</b>	<b>8</b>	<b>18</b>
<b>YEAR 4 SEMESTER 8</b>					
<b>Course Code</b>	<b>Course Title</b>	<b>PREQ</b>	<b>T</b>	<b>P</b>	<b>C</b>
CVE 403	Civil Engineering Application of GIS	-	1	4	3
CVE404	Civil Engineering Systems	MATH302	3	0	3
CVE xxx	Technical Elective IV	-	3	0	3
CVE xxx	Technical Elective V	-	3	0	3
CVE xxx	Technical Elective VI	-	3	0	3
CVE406	Capstone Project II (Civil Engineering Research Project)	CVE405	0	6	3
			<b>13</b>	<b>10</b>	<b>18</b>
<b>MINIMUM CREDIT FOR GRADUATION</b>			<b>143</b>		

<b>TECHNICAL ELECTIVES</b>								
<b>Environmental Engineering</b>								
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>		<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CVE501	Water and Wastewater Treatment	CVE306	3		CVE503	Unit Operations in Environmental Engineering	CVE201	3
CVE502	Microbial Aspects of Environmental Engineering		3					
<b>Water Resources Engineering</b>								
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>		<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CVE517	Advanced Fluid Mechanics	CVE205	3		CVE521	Fund Groundwater Hydrology	CVE205	3
CVE518	Fluvial Hydraulics	-	3		CVE501	Water Supply & Waste Treatment	CVE102	3
CVE519	Water Resource Simulation	-	3					
<b>Geotechnical Engineering</b>								
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>		<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CVE523	Geotechnical Engineering	-	3					
CVE525	Geotechnical Design	CVE523	3					
CVE526	Geotechnical Materials and Analysis	CVE309	3					
<b>Transportation Engineering</b>								
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>		<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CVE533	Traffic Engineering	CVE303	3		CVE537	Transportation Systems and Roadway Geometric Design	CVE303	3
					CVE539	Asphalt Mix Design &	CVE102	3

					Construction			
<b>Structural Engineering</b>								
<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>		<b>Course Code</b>	<b>Course Title</b>	<b>Prereq</b>	<b>Credit Hrs.</b>
CVE541	Advanced Reinforced Concrete	CVE302	3		CVE547	Civil Engineering Failures	CVE301	3
CVE542	Advanced Steel Structures	CVE308	3		CVE548	Design of Structural Systems	CVE541	3
CVE543	Advanced Structural Analysis	CVE301	3		CVE550	Advanced Structural Design	CVE512	3
CVE560	Advanced Foundation Engineering	CVE402	3		CVE550	Advanced Structural Design	CVE512	3