

B. Tech. CSE/IT- Course Outcomes of First Year courses

After the completion of this course, students will be able to:

Semiconductor Physics (BTPH104-18): C101

NBA Course Code	Course Outcomes
C101.1	explain the fundamental principles and properties of electronic materials.
C101.2	understand the basics of semiconductors and transport of charge carriers in semiconductor junction.
C101.3	describe the interaction of light with semiconductors and structure of semiconductor laser.
C101.4	develop the basic tools to study and test the newly developed devices and other semiconductor applications.

Semiconductor Physics Lab (BTPH114-18): C102

NBA Course Code	Course Outcomes
C102.1	verify some of the theoretical concepts learnt in the theory courses.
C102.2	trained in carrying out precise measurements and handling sensitive equipment.
C102.3	introduced to the methods used for estimating and dealing with experimental uncertainties and systematic "errors."
C102.4	learn to draw conclusions from data and develop skills in experimental design.
C102.5	write a technical report which communicates scientific information in a clear and concise manner.

Mathematics Paper-I (BTAM104-18): C103

NBA Course Code	Course Outcomes
C103.1	analyze various problems by using fundamental theorems.
C103.2	apply differential and integral calculus to evaluate definite, improper integrals and its applications.
C103.3	deal with the concept of linear dependence, independence and linear transformations.
C103.4	solve the linear equations by applying the knowledge of matrix algebra.

Basic Electrical Engineering (BTEE101-18): C104

NBA Course Code	Course Outcomes
C104.1	differentiate circuits based on their composition, terminology and their mathematical analysis.
C104.2	analyze the behavior of electrical circuits based on alternating currents as their power supply; solve AC circuits and their practical analysis.
C104.3	understand the basic magnetic circuit; construction as well as working principle of transformer.
C104.4	understand working principle of various electrical machines and components of low voltage electrical installations.

Basic Electrical Engineering Lab (BTEE102-18): C105	
NBA Course Code	Course Outcomes
C105.1	get an exposure to common electrical components and their ratings.
C105.2	make electrical connections by wires of appropriate ratings.
C105.3	determine the characteristics of AC and DC circuits, study their behavior with changes in key parameters.
C105.4	study magnetism and the basic characteristics of transformers.
C105.5	understand the working and directional control of rotating machines.
Engineering Graphics & Design (BTME 101-18): C106	
NBA Course Code	Course Outcomes
C106.1	understand the concepts of Engineering Drawing & Standard Practice to be adopted in Engineering Drawing.
C106.2	understand the projection of Points, Lines, Planes and Solids.
C106.3	understand & draw the section of solids, intersection of surfaces and development of surfaces and learn about their physical significance.
C106.4	understand the working knowledge of orthographic and isometric projections.
C106.5	understand the engineering graphics standards and computer-aided geometric design.
C106.6	apply the learned concepts of engineering Drawing in visual representation of their Engineering Ideas.
Chemistry-I (BTCH101-18): C107	
NBA Course Code	Course Outcomes
C107.1	learn about concepts related to atomic and molecular structures as well as different types of intermolecular forces.
C107.2	Justify various thermodynamic functions and chemical equilibria equations.
C107.3	rationalize different spectroscopic techniques and their basic applications.
C107.4	study about various periodic properties of elements like ionization energy, electron affinity and electronegativity.
C107.5	understand the basic concepts related to major chemical reactions that are used in synthesis of commonly used drug molecules.
C107.6	learn about fundamental concepts of stereochemistry.
Chemistry-I Lab (BTCH102-18): C108	
NBA Course Code	Course Outcomes
C108.1	understand interactions among molecules on the basis of surface tension and viscosity.
C108.2	synthesize small drug molecule and salt samples.
C108.3	estimate rate constants of reactions from concentration of reactants and products as a function of time.
C108.4	measure system properties such as conductance of solutions and redox potentials.
C108.5	illustrate how the adsorbed amount depends on the equilibrium concentration of a solution.
C108.6	test and remove the hardness present in water due to salts of calcium and magnesium.

Mathematics Paper-II (BTAM204-18): C109	
NBA Course Code	Course Outcomes
C109.1	calculate averages and dispersion of different type of data.
C109.2	recapitulate the basic concepts of probability and random variables.
C109.3	apply the idea of various probability distribution to analyze the data.
C109.4	find the degree of correlation of two and more variables using correlation and regression analysis.
C109.5	deal with the sampling distributions by using statistical methods.
Programming for Problem Solving (BTPS101-18): C110	
NBA Course Code	Course Outcomes
C110.1	understand basics of computer and its parts.
C110.2	formulate simple algorithms and translate the algorithms to programs (in C language).
C110.3	implement conditional branching, iteration and recursion.
C110.4	convert a problem into functions by using searching and sorting techniques on the given list.
C110.5	use arrays, pointers and structures to formulate algorithms and programs.
C110.6	apply programming to solve matrix addition and multiplication problems.
Programming for Problem Solving Lab (BTPS102-18): C111	
NBA Course Code	Course Outcomes
C111.1	translate given algorithms to a working and correct program
C111.2	correct syntax errors and logical errors at compile and run time respectively.
C111.3	write iterative as well as recursive programs
C111.4	represent data in arrays, strings and structures and manipulate them through a program.
C111.5	declare pointers of different types and use them in defining self referential structures.
C111.6	create, read and write to and from simple text files.
Workshop/Manufacturing Practices (BTMP101-18): C112	
NBA Course Code	Course Outcomes
C112.1	understand the basics of various machining processes.
C112.2	understand the basics of casting, forging and welding process.
C112.3	develop the development of sheet metal products.
C112.4	know about the exercise involving marking, cutting, fitting and trapping practice.
C112.5	make different wooden Joints.
C112.6	understand the basics of plastic moulding and glass cutting.

English (BTHU101-18): C113	
NBA Course Code	Course Outcomes
C113.1	improve their vocabulary to use different words and phrases in drafting meaningful sentences.
C113.2	identify the basic grammatical aspects and sentence structures for communicating effectively.
C113.3	understand the important points and conclusions in the given text and utilizing effective writing techniques for producing clear and coherent forms of expression.
C113.4	understand the literal and contextual meaning of the given text and to write their responses accordingly.
C113.5	generate new ideas and put forward their point of view effectively while expressing them in creative written form.
C113.6	draft varied forms of business correspondence and professional documents for the purpose of informing, analyzing and reporting
English Lab (BTHU102-18): C114	
NBA Course Code	Course Outcomes
C114.1	improve their listening and speaking skills by acquiring new forms of expressions for lucid communication.
C114.2	produce structured conversation and put forth their point of view fluently on a variety of topics.
C114.3	overcome their inhibition and feel confident while using the language to make their transitions clear.
C114.4	use correct language in general, academic and professional environment.
C114.5	understand the expectations of the industry and prepare themselves for future interviews.
C114.6	give presentation on a given topic, learn to modulate their voice along with exhibiting the right body language.
Mentoring & Professional Development (MPD101-18) : C115	
NBA Course Code	Course Outcomes
C115.1	empower themselves by setting and working towards individual goals.
C115.2	understand the importance of moral & ethical values that exemplify professionalism.
C115.3	access physical fitness, wellness & sports to promote healthy lifestyle.
C115.4	apply various analytical & training methods for their development.
C115.5	utilize physical activity as a tool to manage stress, pressure & work in life.
Mentoring & Professional Development (MPD201-18) : C116	
NBA Course Code	Course Outcomes
C116.1	empower themselves by setting and working towards individual goals.
C116.2	understand the importance of moral & ethical values that exemplify professionalism.
C116.3	access physical fitness, wellness & sports to promote healthy lifestyle.
C116.4	apply various analytical & training methods for their development.
C116.5	utilize physical activity as a tool to manage stress, pressure & work in life.

B. Tech. ECE- Course Outcomes of First Year courses

After the completion of this course, students will be able to:

Semiconductor and Optoelectronics Physics (BTPH105-18): C101

NBA Course Code	Course Outcomes
C101.1	explain the fundamental principles and properties of electronic materials.
C101.2	understand the basics of semiconductors and transport of charge carriers in semiconductor junction.
C101.3	learn the basics of the optoelectronic devices, LEDs, semiconductor lasers, and photo detectors.
C101.4	develop the basic tools to study and test the newly developed devices and other semiconductor applications.

Semiconductor and Optoelectronics Physics Lab (BTPH115-18): C102

NBA Course Code	Course Outcomes
C102.1	verify some of the theoretical concepts learnt in the theory courses.
C102.2	trained in carrying out precise measurements and handling sensitive equipment.
C102.3	introduced to the methods used for estimating and dealing with experimental uncertainties and systematic "errors."
C102.4	learn to draw conclusions from data and develop skills in experimental design.
C102.5	write a technical report which communicates scientific information in a clear and concise manner.

Mathematics-I (BTAM101-18): C103

NBA Course Code	Course Outcomes
C103.1	analyze various problems by using fundamental theorems.
C103.2	apply differential and integral calculus to evaluate definite, improper integrals and its applications.
C103.3	apply the knowledge of partial differentiation to calculate the extreme values of functions of several variables.
C103.4	apply tests on different series to check their convergence and divergence.
C103.5	solve the linear equations by applying the concepts of rank, eigen values, eigen vectors.

Basic Electrical Engineering (BTEE101-18): C104

NBA Course Code	Course Outcomes
C104.1	differentiate circuits based on their composition, terminology and their mathematical analysis.
C104.2	analyze the behavior of electrical circuits based on alternating currents as their power supply; solve AC circuits and their practical analysis.
C104.3	understand the basic magnetic circuit; construction as well as working principle of transformer.
C104.4	understand working principle of various electrical machines and components of low voltage electrical installations.

Basic Electrical Engineering Lab (BTEE102-18): C105

NBA Course Code	Course Outcomes
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C105.1	get an exposure to common electrical components and their ratings.
C105.2	make electrical connections by wires of appropriate ratings.
C105.3	determine the characteristics of AC and DC circuits, study their behavior with changes in key parameters.
C105.4	study magnetism and the basic characteristics of transformers.
C105.5	understand the working and directional control of rotating machines.
Engineering Graphics & Design (BTME 101-18): C106	
NBA Course Code	Course Outcomes
C106.1	understand the concepts of Engineering Drawing & Standard Practice to be adopted in Engineering Drawing.
C106.2	understand the projection of Points, Lines, Planes and Solids.
C106.3	understand & draw the section of solids, intersection of surfaces and development of surfaces and learn about their physical significance.
C106.4	understand the working knowledge of orthographic and isometric projections.
C106.5	understand the engineering graphics standards and computer-aided geometric design.
C106.6	apply the learned concepts of engineering Drawing in visual representation of their Engineering Ideas.
Chemistry-I (BTCH101-18): C107	
NBA Course Code	Course Outcomes
C107.1	learn about concepts related to atomic and molecular structures as well as different types of intermolecular forces.
C107.2	Justify various thermodynamic functions and chemical equilibria equations.
C107.3	rationalize different spectroscopic techniques and their basic applications.
C107.4	study about various periodic properties of elements like ionization energy, electron affinity and electronegativity.
C107.5	understand the basic concepts related to major chemical reactions that are used in synthesis of commonly used drug molecules.
C107.6	learn about fundamental concepts of stereochemistry.
Chemistry-I Lab (BTCH102-18): C108	
NBA Course Code	Course Outcomes
C108.1	understand interactions among molecules on the basis of surface tension and viscosity.
C108.2	synthesize small drug molecule and salt samples.
C108.3	estimate rate constants of reactions from concentration of reactants and products as a function of time.
C108.4	measure system properties such as conductance of solutions and redox potentials.
C108.5	illustrate how the adsorbed amount depends on the equilibrium concentration of a solution.
C108.6	test and remove the hardness present in water due to salts of calcium and magnesium.
Mathematics Paper-II (BTAM202-18): C109	
NBA Course Code	Course Outcomes

C109.1	solve different types of ordinary differential equations .
C109.2	solve different types of Partial differential equations .
C109.3	analyze the several errors and approximations in numerical methods.
C109.4	apply numerical techniques to solve various mathematical equations.
Programming for Problem Solving (BTPS101-18): C110	
NBA Course Code	Course Outcomes
C110.1	understand basics of computer and its parts.
C110.2	formulate simple algorithms and translate the algorithms to programs (in C language).
C110.3	implement conditional branching, iteration and recursion.
C110.4	convert a problem into functions by using searching and sorting techniques on the given list.
C110.5	use arrays, pointers and structures to formulate algorithms and programs.
C110.6	apply programming to solve matrix addition and multiplication problems.
Programming for Problem Solving Lab (BTPS102-18): C111	
NBA Course Code	Course Outcomes
C111.1	translate given algorithms to a working and correct program
C111.2	correct syntax errors and logical errors at compile and run time respectively.
C111.3	write iterative as well as recursive programs
C111.4	represent data in arrays, strings and structures and manipulate them through a program.
C111.5	declare pointers of different types and use them in defining self referential structures.
C111.6	create, read and write to and from simple text files.
Workshop/Manufacturing Practices (BTMP101-18): C112	
NBA Course Code	Course Outcomes
C112.1	understand the basics of various machining processes.
C112.2	understand the basics of casting, forging and welding process.
C112.3	develop the development of sheet metal products.
C112.4	know about the exercise involving marking, cutting, fitting and trapping practice.
C112.5	make different wooden Joints.
C112.6	understand the basics of plastic moulding and glass cutting.
English (BTHU101-18): C113	
NBA Course Code	Course Outcomes
C113.1	improve their vocabulary to use different words and phrases in drafting meaningful sentences.

C113.2	acquire knowledge about the basic grammatical aspects and sentence structures for communicating effectively.
C113.3	understand the given text and utilizing effective writing techniques for producing clear and coherent forms of expression.
C113.4	understand the literal and contextual meaning of the given text and to write their responses accordingly.
C113.5	put forward their point of view effectively while expressing their ideas in creative written form.
C113.6	draft varied forms of business correspondence and professional documents for the purpose of informing, analyzing and official reporting.
English Lab (BTHU102-18): C114	
NBA Course Code	Course Outcomes
C114.1	improve their listening and speaking skills by acquiring new forms of expressions for lucid communication.
C114.2	produce structured conversation and put forth their point of view fluently on a variety of topics.
C114.3	overcome their inhibition and feel confident while using the language to make their transitions clear.
C114.4	use correct language in general, academic and professional environment.
C114.5	understand the expectations of the industry and prepare themselves for future interviews.
C114.6	give presentation on a given topic, learn to modulate their voice along with exhibiting the right body language.
Mentoring & Professional Development (MPD101-18) : C115	
NBA Course Code	Course Outcomes
C115.1	empower themselves by setting and working towards individual goals.
C115.2	understand the importance of moral & ethical values that exemplify professionalism.
C115.3	access physical fitness, wellness & sports to promote healthy lifestyle.
C115.4	apply various analytical & training methods for their development.
C115.5	utilize physical activity as a tool to manage stress, pressure & work in life.
Mentoring & Professional Development (MPD201-18) : C116	
NBA Course Code	Course Outcomes
C116.1	empower themselves by setting and working towards individual goals.
C116.2	understand the importance of moral & ethical values that exemplify professionalism.
C116.3	access physical fitness, wellness & sports to promote healthy lifestyle.
C116.4	apply various analytical & training methods for their development.
C116.5	utilize physical activity as a tool to manage stress, pressure & work in life.
B. Tech. ME- Course Outcomes of First Year courses	
After the completion of this course, students will be able to:	
Electromagnetism (BTPH103-18): C101	
NBA Course Code	Course Outcomes

C101.1	specify the constitutive relationships for electrostatic fields and understand their importance.
C101.2	describe the magnetic fields produced by moving charges in a various configurations.
C101.3	acquire the knowledge of Faraday's law, induced emf and Maxwell's equations.
C101.4	explain propagation of electromagnetic waves in various media.
Electromagnetism Lab (BTPH103-18): C102	
NBA Course Code	Course Outcomes
C102.1	verify some of the theoretical concepts learnt in the theory courses.
C102.2	trained in carrying out precise measurements and handling sensitive equipment.
C102.3	introduced to the methods used for estimating and dealing with experimental uncertainties and systematic "errors."
C102.4	learn to draw conclusions from data and develop skills in experimental design.
C102.5	write a technical report which communicates scientific information in a clear and concise manner.
Mathematics-I (BTAM101-18): C103	
NBA Course Code	Course Outcomes
C103.1	analyze various problems by using fundamental theorems.
C103.2	apply differential and integral calculus to evaluate definite, improper integrals and its applications.
C103.3	apply the knowledge of partial differentiation to calculate the extreme values of functions of several variables.
C103.4	apply tests on different series to check their convergence and divergence.
C103.5	solve the linear equations by applying the concepts of rank, eigen values, eigen vectors.
Basic Electrical Engineering (BTEE101-18): C104	
NBA Course Code	Course Outcomes
C104.1	differentiate circuits based on their composition, terminology and their mathematical analysis.
C104.2	analyze the behavior of electrical circuits based on alternating currents as their power supply; solve AC circuits and their practical analysis.
C104.3	understand the basic magnetic circuit; construction as well as working principle of transformer.
C104.4	understand working principle of various electrical machines and components of low voltage electrical installations.
Basic Electrical Engineering Lab (BTEE102-18): C105	
NBA Course Code	Course Outcomes
C105.1	get an exposure to common electrical components and their ratings.
C105.2	make electrical connections by wires of appropriate ratings.
C105.3	determine the characteristics of AC and DC circuits, study their behavior with changes in key parameters.
C105.4	study magnetism and the basic characteristics of transformers.
C105.5	understand the working and directional control of rotating machines.

Engineering Graphics & Design (BTME 101-18): C106	
NBA Course Code	Course Outcomes
C106.1	understand the concepts of Engineering Drawing & Standard Practice to be adopted in Engineering Drawing.
C106.2	understand the projection of Points, Lines, Planes and Solids.
C106.3	understand & draw the section of solids, intersection of surfaces and development of surfaces and learn about their physical significance.
C106.4	understand the working knowledge of orthographic and isometric projections.
C106.5	understand the engineering graphics standards and computer-aided geometric design.
C106.6	apply the learned concepts of engineering Drawing in visual representation of their Engineering Ideas.
Chemistry-I (BTCH101-18): C107	
NBA Course Code	Course Outcomes
C107.1	learn about concepts related to atomic and molecular structures as well as different types of intermolecular forces.
C107.2	Justify various thermodynamic functions and chemical equilibria equations.
C107.3	rationalize different spectroscopic techniques and their basic applications.
C107.4	study about various periodic properties of elements like ionization energy, electron affinity and electronegativity.
C107.5	understand the basic concepts related to major chemical reactions that are used in synthesis of commonly used drug molecules.
C107.6	learn about fundamental concepts of stereochemistry.
Chemistry-I Lab (BTCH102-18): C108	
NBA Course Code	Course Outcomes
C108.1	understand interactions among molecules on the basis of surface tension and viscosity.
C108.2	synthesize small drug molecule and salt samples.
C108.3	estimate rate constants of reactions from concentration of reactants and products as a function of time.
C108.4	measure system properties such as conductance of solutions and redox potentials.
C108.5	illustrate how the adsorbed amount depends on the equilibrium concentration of a solution.
C108.6	test and remove the hardness present in water due to salts of calcium and magnesium.
Mathematics Paper-II (BTAM203-18): C109	
NBA Course Code	Course Outcomes
C109.1	solve different types of ordinary differential equations .
C109.2	apply mathematical knowledge for the solutions of differential equations.
C109.3	apply knowledge of complex numbers in finding solutions of complex trigonometric, exponential and logarithmic problems.
C109.4	check the analyticity of the functions of complex variables and their bilinear transformation.
C109.5	deal with the different tools of differentiation and integration of functions of a complex variable.

Programming for Problem Solving (BTPS101-18): C110	
NBA Course Code	Course Outcomes
C110.1	understand basics of computer and its parts.
C110.2	formulate simple algorithms and translate the algorithms to programs (in C language).
C110.3	implement conditional branching, iteration and recursion.
C110.4	convert a problem into functions by using searching and sorting techniques on the given list.
C110.5	use arrays, pointers and structures to formulate algorithms and programs.
C110.6	apply programming to solve matrix addition and multiplication problems.
Programming for Problem Solving Lab (BTPS102-18): C111	
NBA Course Code	Course Outcomes
C111.1	translate given algorithms to a working and correct program
C111.2	correct syntax errors and logical errors at compile and run time respectively.
C111.3	write iterative as well as recursive programs
C111.4	represent data in arrays, strings and structures and manipulate them through a program.
C111.5	declare pointers of different types and use them in defining self referential structures.
C111.6	create, read and write to and from simple text files.
Workshop/Manufacturing Practices (BTMP101-18): C112	
NBA Course Code	Course Outcomes
C112.1	understand the basics of various machining processes.
C112.2	understand the basics of casting, forging and welding process.
C112.3	develop the development of sheet metal products.
C112.4	know about the exercise involving marking, cutting, fitting and trapping practice.
C112.5	make different wooden Joints.
C112.6	understand the basics of plastic moulding and glass cutting.
English (BTHU101-18): C113	
NBA Course Code	Course Outcomes
C113.1	improve their vocabulary to use different words and phrases in drafting meaningful sentences.
C113.2	acquire knowledge about the basic grammatical aspects and sentence structures for communicating effectively.
C113.3	understand the given text and utilizing effective writing techniques for producing clear and coherent forms of expression.
C113.4	understand the literal and contextual meaning of the given text and to write their responses accordingly.
C113.5	put forward their point of view effectively while expressing their ideas in creative written form.

C113.6	draft varied forms of business correspondence and professional documents for the purpose of informing, analyzing and official reporting.
English Lab (BTHU102-18): C114	
NBA Course Code	Course Outcomes
C114.1	improve their listening and speaking skills by acquiring new forms of expressions for lucid communication.
C114.2	produce structured conversation and put forth their point of view fluently on a variety of topics.
C114.3	overcome their inhibition and feel confident while using the language to make their transitions clear.
C114.4	use correct language in general, academic and professional environment.
C114.5	understand the expectations of the industry and prepare themselves for future interviews.
C114.6	give presentation on a given topic, learn to modulate their voice along with exhibiting the right body language.
Mentoring & Professional Development (MPD101-18) : C115	
NBA Course Code	Course Outcomes
C115.1	empower themselves by setting and working towards individual goals.
C115.2	understand the importance of moral & ethical values that exemplify professionalism.
C115.3	access physical fitness, wellness & sports to promote healthy lifestyle.
C115.4	apply various analytical & training methods for their development.
C115.5	utilize physical activity as a tool to manage stress, pressure & work in life.
Mentoring & Professional Development (MPD201-18) : C116	
NBA Course Code	Course Outcomes
C116.1	empower themselves by setting and working towards individual goals.
C116.2	understand the importance of moral & ethical values that exemplify professionalism.
C116.3	access physical fitness, wellness & sports to promote healthy lifestyle.
C116.4	apply various analytical & training methods for their development.
C116.5	utilize physical activity as a tool to manage stress, pressure & work in life.