

Course Code	Ability Enhancement Courses (AEC)						Marks			Pre-requisite
	Course Name	Level	L	T	P	C	CIE	SEE	Total	
241PE002	NSS/ NCC- I	FC	0	0	1	1	100	-	100	-
241CS071	Computer Programming and Data Structures	IC	0	0	2	2	50	50	100	-
241EN001	Essential Cognitive Skills for Engineers	FC	0	0	1	1	100	-	100	-
241EN002	Advanced Cognitive Skills for Engineers	FC	0	0	1	1	100	-	100	-
241PE003	NSS/ NCC- II	FC	0	0	1	1	100	-	100	-
241PE004	Physical Education, First Aid and Yoga Practice	FC	0	0	2	2	100	-	100	-
241UC012	Personality Development	FC	1	0	1	2	100	-	100	-
	Total		1	0	9	10				

NSS/NCC-I**Semester: I****Course Code: 241PE002**

L	T	P	C
0	0	1	1

1. Physical Training:

Includes exercises, drills, and workouts focusing on improving physical fitness, strength, and endurance.

2. First Aid Training:

Instruction on basic first aid techniques such as CPR, wound care, and emergency response.

3. Navigation and Orienteering:

Learning how to use maps, compasses, and GPS devices for navigation in outdoor environments.

4. Campcraft and Survival Skills:

Teaching essential skills for outdoor survival, including shelter building, fire starting, and foraging.

5. Sports and Games:

Participation in various sports and games to develop teamwork, coordination, and sportsmanship.

Computer Programming and Data Structures

Semester: II	L	T	P	C
Course Code: 241CS071	0	0	2	2

Course Outcomes: At the end of the Course, Student will be able to:

- CO1:** Develop simple applications in C using basic constructs
- CO2:** Design and implement applications using functions, pointers and Structures
- CO3:** Explore the applications of linear and non-linear data structures
- CO4:** Learn to represent data using tree and graph data structure.
- CO5:** Compare and select effective sorting and searching algorithms.

Mapping of Course Outcomes with Program Outcomes:

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	2	2									
CO2	2	2									
CO3	3	1									
CO4	2	2									
CO5	2	2									

INTEGRATED LAB WITH 2 CREDITS

Practice

1: Basic Structure and Familiar with IDE's

- a. Basic Linux environment and its editors like Vi, Vim & Emacs etc.
- b. Exposure to Turbo C, gcc
- c. Basic C Program compilation
- d. Explore to Hacker Rank or any other Online coding platform and compiler envi

Develop C program for the following:

2: I/O statement and Operators

- a. Conversion of Fahrenheit to Celsius and vice versa.
- b. Distance travelled by an object.
- c. Calculate Simple interest and compound interest.

3: Conditional operators

- a. Find the Square root of a given number.
- b. Find the area of circle, square, rectangle and triangle.
- c. Find the maximum of three numbers using conditional operator.

4: Continue for operators

- a. Take marks of 5 subjects in integers, find the total in integer and average in float.
- b. Generate the Roots of a Quadratic Equation.
- c. Generate electricity bill.
- d. Find the given year is a leap year or not.
- e. Given num

5 : Arrays

- a. Search an element in array (Linear Search)
- b. Implement Bubble sort, selection sort
- c. Find min and max elements in array
- d. Insert an element into array
- e. Find the Sum of two 2-D arrays
- f. Multiplication of two 2-D arrays

6: Function

- a. Swap two numbers using functions and without functions
- b. Print factorial of given numbers using functions and without function.
- c. Print Fibonacci using functions and without functions.

7: Strings

- a. Lowercase to Uppercase, Uppercase to Lowercase, Toggle case, Sentential case

8: linked list

Perform the creation, insertion, deletion and traversal operations on Singly linked list

9: Linked list

Perform the creation, insertion, deletion and traversal operations on doubly linked list

10: Linked list

Perform the creation, insertion, deletion and traversal operations on circular linked list

11: Stack

- a. Implement stack (its operations) using arrays.
- b. Implement stack (its operations) using pointers.

12: Queues

- a. Implement Queue (its operations) using arrays.
- b. Implements selection sort to sort given list of integers in ascending order.

Additional Practice:

1. Write a C program that implements selection sort to sort given list of integers in ascending order.
2. Write a C program that implements bubble sort to sort given list of integers in ascending order.

3. Pointers in C Objective: learn to implement the basic functionalities of pointers in C.
<https://www.hackerrank.com/challenges/pointer-in-c/problem?isFullScreen=true>
4. Boxes through a Tunnel Objective: Using a structure for transporting some boxes thro

Text Books:

1. Byron S Gottfried, “Programming with C”, Schaum’s Outlines, Second Edition, Tata McGraw-Hill. ISBN: 978-0070240353
2. Ellis Horowitz, Sartaj Sahni, Susan anderson-Freed, —Fundamentals of Data Structures in C, Second Edition, University Press. ISBN: 978- 0716782506.

Reference Books:

1. Fundamentals of data structures in C, Ellis Horowitz, Sartaj Sahni, Susan anderson-Freed, Silicon Press. ISBN: 0716782502.
2. Mark Allen Weiss, —Data Structures and Algorithm Analysis in C, Second Edition, Pearson Education. ISBN: 978-8131714744.

Web Links:

1. <https://nptel.ac.in/courses/106102064>
2. <https://archive.nptel.ac.in/courses/106/105/106105225/>

Essential Cognitive Skills For Engineers
 (Common to all branches)

Semester: I	L T P C
Course Code: 241EN001	0 0 1 1

Course Outcomes: At the end of the course, student will be able to:

- CO1:** Recognize the different aspects of the English language proficiency with emphasis on LSRW skills.
- CO2:** Apply communication skills through various language learning activities.
- CO3:** Analyze the English speech sounds, stress, intonation and syllable division for better listening and speaking comprehension.
- CO4:** Enable them to learn and apply fundamentals of English grammar concepts for improved language.
- CO5:** Make use of various types of vocabulary in different academic and professional careers.

Mapping of Course Outcomes with Program Outcomes:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	-	-	-	-	-	3	-	-
CO2	-	-	-	-	-	-	-	-	3	-	-
CO3	-	-	-	-	-	-	-	-	3	-	-
CO4	-	-	-	-	-	-	-	-	3	-	-
CO5	-	-	-	-	-	-	-	-	3	-	-

Practice:

Unit – 1 Outstanding people A/B/C/D

Listening Conversation about Jocelyn Bell- Burnell, Podcast: The 30-day challenge, Starting a new job, Conversation about technology

Speaking Discussing inspiring people, Asking and answering questions about challenges, Explaining a process; Checking understanding, Discussing technology.

Reading	Articles: <i>Protector of the sea and The woman who reinvented children's TV</i> , Interviews: <i>30-day challenge</i> , Article: <i>Tech free!</i>
Writing	Article Organizing an article
Grammar	Review of Tenses, Questions
Vocabulary	Character adjectives, trying and succeeding
Pronunciation	The letter e; Word stress, Rapid speech

Unit – 2 Survival A/B/C/D

Listening	Conversation about a survival situation, Interview: The Tiger, Cooking for a friend, Talking about getting lost
Speaking	Telling a survival story, Giving advice; Asking questions, Giving compliments and responding, Discussing the natural environment
Reading	Article: <i>Lost at sea</i> , Leaflet: <i>How to survive...an animal attack</i> , Leaflet: <i>Be wise and survive</i>
Writing	Guidelines, organizing guidelines in a leaflet
Grammar	Narrative tenses, Future time clauses and conditionals
Vocabulary	Expressions with <i>get</i> , Animals and the environment
Pronunciation	Sound and Spelling: g, Intonation in question tags

Unit – 3 Talent A/B/C/D

Listening	Conversation: learning experiences, Radio Programme: The sports gene, Making wedding plans, Interviews about sport
Speaking	Talking about something you have put a lot of effort into, Discussing sport and ways to improve performance, planning a party, Talking about popular sports
Reading	Text about learning; <i>Learning to learn</i> , Article: <i>Born to be the best</i> ; Three articles about athletes, Article: <i>Fitness: Seattle snapshot</i>
Writing	Article describing data
Grammar	Multi-word verbs, Present perfect and present perfect continuous
Vocabulary	Ability and achievement, word connected with sport
Pronunciation	Word stress, sound and spelling consonant sounds

Unit – 4 Life Lessons A/B/C/D

Listening	Interview: Psychology of money; Two monologues: Life-changing events, Two monologues; training for a job, Presenting photos, Three monologues; living in different places
Speaking	Talking about how your life has changes, Discuss experiences of training and rules, Describing photos: Expressing careful disagreement, Discussing living in a different country
Reading	Two texts about life-changing events that helped people become rich, Article: <i>Training for the emergency frontline</i> , Advert for being an international student ‘buddy’
Writing	Job application, Giving a positive impression
Grammar	<i>Used to</i> and <i>would</i>
Vocabulary	Cause and result, Talking about difficulty
Pronunciation	Sound and spelling: <i>u</i>

Unit – 5 Chance A/B/C/D

Listening	Monologue: What are your chances?, Conversation: Talking about work, Money problems, News reports: environmental problems
Speaking	Discussing possible future events, Role Play: job interview, Explaining and responding to an idea for a café, Giving opinions on environmental problems
Reading	Quiz: <i>Are you an optimist or a pessimist?</i> ; Article: <i>Why we think we’re going to have a long and happy life</i> , Quiz: <i>The unknown continent</i> ; Article: <i>Cooking in Antarctica</i> , Essay about protecting the environment
Writing	For and against essay, Arguing for and against an idea
Grammar	Future probability, Future perfect and future continuous
Vocabulary	Adjectives describing attitude, The natural world
Pronunciation	Sound and spelling : <i>th</i> , Intonation groups

Text Book:

- Cambridge Empower – Second Edition B2 Level - Adrian Doff, Craig Thaine, Herbert Puchta, Jeff Stranks, Peter Lewis – Jones. ISBN: 978-1107468726.

Suggested Software:

- Cambridge Empower

- Soft X (K-Van Solutions)

Reference Books:

1. M Ashraf Rizvi: Effective Technical Communication. ISBN: 978-9352605781.
2. Raymond Murphy: English Grammar in Use, Cambridge University Press. Fifth Edition. ISBN 978-1-108-45771-2.
3. J. Sethi & P.V. Dhamija. A Course in Phonetics and Spoken English, (2nd Ed), Kindle, 2013. ISBN : 9788120314955.

Web links:

1. <https://www.cambridgeone.org/login>
2. <https://www.britishcouncil.in/english/online>
3. www.englishmedialab.com

Advanced Cognitive Skills For Engineers
(Common to all branches)

Semester: II
Course Code: 241EN002

L T P C
0 0 1 1

Course Outcomes: At the end of the course, student will be able to:

- CO1: Recognize the basics of communication and summarize formal and informal language expressions in all aspects.
- CO2: Establish and maintain interpersonal relationships and transmit the message through different language activities.
- CO3: Use language effectively to prepare and demonstrate proficiency in facing various types of interviews.
- CO4: Demonstrate and exhibit professionalism in participating in various public speaking activities like debates, group discussions and presentation skills.
- CO5: Identify the basic elements of writing and apply the fundamentals to compose e-mails catering to different professional needs.

Mapping of Course Outcomes with Program Outcomes:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	-	-	-	-	-	3	-	-
CO2	-	-	-	-	-	-	-	-	3	-	-
CO3	-	-	-	-	-	-	-	-	3	-	-
CO4	-	-	-	-	-	-	-	-	3	-	-
CO5	-	-	-	-	-	-	-	-	3	-	-

Practice

Unit – 1 Around the globe A/B/C/D

Listening	Two monologues about sightseeing tours, Interview: disappearing languages, Asking for a favour, conversation: a trip to the Grand Canyon
Speaking	Comparing different tourist destinations, Agreeing and disagreeing, Asking for a favour, Discussing local tourist destinations.
Reading	Website about four tourist destinations; Website: <i>Where to go?</i>
Writing	Travel blog, Using descriptive language

Grammar	Infinitives and <i>-ing</i> forms
Vocabulary	Travel and tourism, Describing changes
Pronunciation	Consonant clusters, Consonant sounds
Unit – 2	City living A/B/C/D
Listening	Interview: ‘Smart’ cities: Two monologues talking about ‘smart’ cities, Two monologues: house renovations, Flat hunting, Interviews about a new shopping centre
Speaking	Discussing good and bad points about a city
Reading	Article: <i>Quick-slow down!</i> , Article: <i>Who puts the ‘real’ in reality TV?</i> Email: Complaining about an important issue.
Writing	Email of complaint, Using formal language
Grammar	<i>Too/enough; so/such, Causative have/get</i>
Vocabulary	Describing life in cities, Film and TV; Houses
Pronunciation	Sound and spelling: o, Stress in compound nouns
Unit – 3	Dilemmas A/B/C/D
Listening	Radio programme: person finance, Three monologues about honesty, Going to the bank, Conversation about a TV programme
Speaking	Giving opinions on financial matters, Discussing moral dilemmas, Talking about hopes and worries Discussing programmes about crime
Reading	Article: <i>Is it time to give up on cash?</i> , Newspaper article: <i>The honesty experiment</i> , Review: <i>Crime with a smile</i>
Writing	Review, Organising a review
Grammar	First and second conditionals, Third conditional; <i>should have+past participle</i>
Vocabulary	Money and finance, Crime
Pronunciation	Stressed and unstressed words; Sound and spelling: <i>l</i> , Word groups
Unit – 4	Discoveries A/B/C/D
Listening	Conversation about inventions, Conversation about an email hoax, Finding the perfect flat, Four monologues

Speaking	about alternative medicine Talking about inventions, Describing a hoax or a scam or a case of fraud, Giving and receiving surprises
Reading	Article: <i>Too good to be true?</i> , Article: <i>The rise and fall of Barry Minkow</i> , Essay: <i>The Value of alternative medicine</i>
Writing	Opinion essay, Presenting a series of arguments
Grammar	Relative clauses, Reported speech; Reporting verbs
Vocabulary	Health, Verbs describing thought and knowledge
Pronunciation	Sound and spelling : <i>ui</i> , Linking and intrusion

Unit – 5 Possibilities A/B/C/D

Listening	Interview about Dan Cooper, Two monologues: pursuing a dream, Celebrating good news, conversation about goals
Speaking	Telling stories about coincidences, Describing and comparing brave or amazing people, Telling an important piece of news, Talking about performing
Reading	Story: The man who disappeared; Blog: <i>The Wreck of the Titan</i> , Article: <i>Dream to help</i> , Story: Rosa's diary: <i>The ultimate goal</i>
Writing	Story, Making a story interesting
Grammar	Past modals of deduction, Wishes and regrets
Vocabulary	Adjectives with prefixes, Verbs of effort
Pronunciation	Word stress, Linking, Consonant clusters

Text Book:

- Cambridge Empower – Second Edition B2 Level - Adrian Doff, Craig Thaine, Herbert Puchta, Jeff Stranks, Peter Lewis – Jones. ISBN: 978-1107468726.

Suggested Software:

- Cambridge Empower
- Soft X (K-Van Solutions)

Reference Books:

1. Raman Meenakshi, Sangeeta-Sharma. Technical Communication. Oxford University Press.2018. ISBN: 9789354972256.
2. Michael Swan- Practical English Usage. ISBN:9780194421461.
3. Taylor Grant: English Conversation Practice, Tata McGraw-Hill Education India,2016.

ISBN:978-0070996038.

Web links:

- <https://www.cambridgeone.org/login>
- <https://www.coursera.org/>
- <https://www.skillshare.com/>
- <https://www.mindtools.com/cawh8bu/communication-tool>

NSS/NCC-II

Semester : II	L	T	P	C
Course Code: 241PE003	0	0	1	1

1. Environmental Cleanup Campaign:

Organize a team to clean up local parks, beaches, or other public areas.
 Educate the community about the importance of waste reduction and recycling.

2. Tree Planting Initiative:

Collaborate with local organizations to plant trees in deforested areas or urban spaces.
 Raise awareness about the benefits of reforestation for the environment and local ecosystems.

3. Awareness about Food Insecurity

Raise awareness about food insecurity issues and encourage ongoing support for those in need.

4. Educational Workshops for Underprivileged Communities:

Conduct workshops on basic skills such as literacy, numeracy, or vocational training for underprivileged individuals or communities.
 Empower participants with knowledge and resources to improve their quality of life.

5. Health and Hygiene Campaign:

Organize health and hygiene awareness campaigns in schools, communities, or public spaces.
 Distribute hygiene kits containing essentials like soap, toothpaste, and sanitary products to those in need.

6. Environmental Education Programs:

Partner with schools or community centres to deliver educational programs on environmental conservation and sustainability.
 Engage participants in hands on activities such as planting gardens, building compost bins, or creating recycling initiatives.

Physical Education, First Aid and Yoga Practice

Semester:III	L	T	P	C
Course Code: 241PE004	0	0	2	2

ACTIVITY-1 (Indoor)

Surya Namaskar

- Pranamasana (Prayer Pose)
- Hasta Uttanasana (Raised Arms Pose)
- Hasta Padasana (Hand to Foot Pose)
- AshwaSanchalanasana (Equestrian Pose)
- Dandasana (Stick Pose)
- AshtangaNamaskara (Salute with Eight Parts or Points)
- Bhujangasana (Cobra Pose)
- Parvatasana (Mountain Pose)
- AshwaSanchalanasana (Equestrian Pose)
- Hasta Padasana (Hand to Foot Pose)
- Hasta Uttanasana (Raised Arms Pose)
- Pranamasana (Prayer Pose)

ACTIVITY-2 (Outdoor)

Recreation Games:

- Shuttle Run relay
- Dodge Ball
- Tug of War

ACTIVITY-3 (Indoor)

Asanas

- Sitting Postures,
- Supine Postures,
- Abdominal Postures,
- Hand Postures,
- Knee Postures,
- Leg Postures,
- Head Postures

ACTIVITY-4 (Outdoor)

Major Games :

- Kabaddi
- Volleyball
- Basketball
- Cricket

ACTIVITY-5 (Indoor)

Kriyas&Bandas

- Dhouti,
- Basti
- Neti,
- Navali
- Kapalabati
- Trataka

ACTIVITY-6 (Outdoor)**Sports :(Athletics Throws)**

- Shotput
- Discuss
- Javelin

ACTIVITY-7 (Indoor)**Pranayama**

- NadiShodhana (Alternate Nostril Breathing)
- Ujjayi Pranayama (Victorious Breath)
- Kapalabhati (Skull Shining Breath)
- Bhastrika Pranayama (Bellows Breath)
- Sheetali Pranayama (Cooling Breath)
- Sheetkari Pranayama (Hissing Breath)
- Bhramari Pranayama (Bee Breath)
- Sitali Pranayama (Cooling Breath)
- AnulomVilom (Alternate Nostril Breathing with Retention)

ACTIVITY-8(Outdoor)**Sports Activities :(Athletics-Runs)**

- 100Mts
- 200Mts
- 400Mts
- 800Mts
- 5000Mts

ACTIVITY-9 (Indoor)**Meditation**

- Mantras
- Japas

ACTIVITY-10(Outdoor)

- Aerobic exercises
- Calisthenics
- weight training
- circuit training
- interval training

- Fartlek training

ACTIVITY-11(Indoor)**Yoga Mudras:**

- Jana Mudra
- Chin Maya Mudra
- Vayu Mudra
- Agni Mudra
- Varun Mudra

ACTIVITY-12 (Outdoor)**Games:**

- Foot ball
- Shuttle Badminton
- Table tennis
- Kho - Kho

ACTIVITY-13 (Outdoor)**Sports :(Athletics Jumps)**

- Long jump
- Triple jump
- High jump

ACTIVITY-14 (Indoor)**First Aid:**

- RICE
- Shock
- Drowning
- Snake Bite
- Poison
- Bone and Muscle(Injuries)

Personality Development

Semester: V

Course Code: 241UC012

L	T	P	C
1	0	1	2

Course Outcomes:

At the end of the Course, Student will be able to:

- CO1:** Define personality, explain its nature, theories, and types.
- CO2:** Interpret humanistic approaches, Maslow’s theory, and determinants of personality.
- CO3:** Analyze MBTI types, locus of control, and behavioral types and their impact on organizational behavior.
- CO4:** Explain perception, attribution, learning theories, and their relevance to organizational behavior.
- CO5:** Evaluate motivation, teamwork, intelligence, emotional intelligence, and their influence on organizational performance.

Mapping of Course Outcomes with Program Outcomes:

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	2	-	-	-	1	-	-	-	2	-
CO2	3	2	-	-	-	2	-	-	-	2	-
CO3	3	3	-	-	-	2	-	2	3	3	1
CO4	3	2	-	2	-	1	-	2	2	2	-
CO5	3	2	-	2	-	2	-	2	3	3	2

UNIT – I

Personality

Personality Definition, Nature of personality, theories of personality and its types. The humanistic approach - Maslow's self-actualization theory, shaping of personality, determinants of personality, Myers-Briggs Typology Indicator, Locus of control and performance, Type A and Type B Behaviours, personality and Organizational Behaviour.

Practice:

1. MBTI personality analysis.
2. Firo-B.
3. Leadership styles
4. Case studies on Personality and Organizational Behavior

UNIT – II

Individual Behaviour

Foundations of individual behavior and factors influencing individual behavior, Models of individual behavior, Perception and attributes and factors affecting perception, Attribution theory and case studies on Perception and Attribution.

UNIT - III

Learning

Learning: Meaning and definition, theories and principles of learning, Learning and organizational behavior, Learning and training, learning feedback.

Practice:

1. Learning Styles and Strategies
2. Interpersonal Communication

UNIT - IV

Intelligence

Attitude and values, Intelligence- types of Intelligence, theories of intelligence, measurements of intelligence, factors influencing intelligence, intelligence and Organizational behavior, emotional intelligence.

Practice:

1. Win-win game
2. Conflict Management

UNIT - V

Motivation

Motivation- theories and principles, Teamwork and group dynamics.

Practice:

1. Motivational needs
2. Teamwork and team building
3. Group Dynamics

Text Books:

1. Andrews, Sudhir, 1988, How to Succeed at Interviews. Tata McGraw-Hill.
2. Heller, Robert, 2002, Effective Leadership. Essential Manager series. Dk Publishing.

Reference Books:

1. Hindle, Tim, 2003, Reducing Stress. Essential Manager series. Dk Publishing.
2. Lucas, Stephen, 2001, Art of Public Speaking. New Delhi. Tata - Mc-Graw Hill.

Web Links:

1. <https://www.udemy.com/courses/personal-development/?srsltid=AfmBOorazm-vv0VZlwF6Mv6AhA4qHJZSCzfroRmuUYD3LhehRwTxIpXV>
2. https://www.bharathuniv.ac.in/colleges1/downloads/courseware_ece/notes/BSS201%20-%20PERSONALITY.pdf