



CPA
COLLEGE OF GLOBAL STUDIES
Affiliated to University of Calicut & Recognized by Govt. of Kerala
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equipping with excellence

FIRST SEMESTER

English Language Skills for Sciences

CALICUT UNIVERSITY – FOUR-YEAR UNDERGRADUATE PROGRAMME (CU-FYUGP)

GENERAL FOUNDATION COURSE

ABILITY ENHANCEMENT COURSE (AEC)

Programme	General Foundation Course				
Course Code	ENGIFA101(2)				
Course Title	English Language Skills for Sciences				
Type of Course	Ability Enhancement Course (AEC)-Science				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practicum per week	Total Hours
	3	2	-	2	60
Pre-requisites	A basic understanding of science and fundamental knowledge of English with an interest in interdisciplinary approach.				

Course Summary	The course aims to improve communication skills through Listening, Speaking, Reading, and Writing (LSRW). It encourages lively interactions between literature and science. Designed to equip students for today's technology-driven world, it emphasizes tackling challenges and seizing opportunities
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Course Outcome:

CO	CO Statement	Cognitive Level	Knowledge Category	Evaluation Tools used
CO1	Develop strategies for lifelong learning, becoming more autonomous and confident in using English in diverse academic and professional contexts.	U, E	C, M	Assignments, Discussion, Presentations
CO2	Identify the relationship between the literary and scientific worlds by exploring various literary texts to deepen the understanding of scientific principles and cultural significance.	U, An, C	F, C	Writing exercises, Reading activities, role play, and oral presentations.
CO3	Enhance the ability to engage in effective and meaningful conversations in academic and professional contexts, demonstrating both active listening and articulate speaking skills	R, U, An	F, C	Listening exercises, Interviews and Debates, Writing activities.
CO4	Summarize main ideas, identify supporting details, and evaluate arguments in written responses.	U, An, E	C, M	Written Assignments, Reviews, Group Discussion,
CO5	Promote dialogue and reflection on the role of science in shaping human identity, values and aspirations.	U, Ap, AN	F, M	Debates, Speeches, Presentation
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge (F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Perceptions (Unlocking the Cosmic Secrets)		7	10
	1	Introduction	1	
	2	Questioning the Universe -Stephen Hawking https://youtu.be/aCo_aHIN4Zs?si=EYo0Nt-sGexPwRv3	2	
	3	Above Pate Valley- Gary Snyder https://www.poetryfoundation.org/poems/47179/above-pate-valley	2	
	4	The Last Stand-Documentary https://youtu.be/Rb4q_dXo7Bw?si=8W0ZxGT369a15tjz	2	
II	Dimensions (Science, Society and Environment)		9	15
	5	Introduction	1	
	6	Secularism and Scientific Temper- Pushpa M Bhargava https://archive.org/details/AngelsDevilsAndScience/page/n6/mode/1up	3	
	7	The Dangers of Climate Change-Carl Sagan's https://gizmodo.com/heres-carl-sagans-original-essay-on-the-dangers-of-cl-1481304135	3	
	8	Light on a Dark Lady- Trends in Biochemical Sciences- Anne Piper - pp.151-154	2	
III	Viewpoints (Exploring Scientific Pathways)		6	
	9	Introduction	1	10
	10	The Peace of Wild Things-Wendell Berry https://www.yourdaily poem.com/listpoem.jsp?poem_id=2386	1	
	11	A Day in the Country- Anton Chekhov https://www.shortstoryguide.com/read-day-country-anton-chekhov/	2	
	12	C V Raman as a Science Communicator: A historical Perspective -G V Pavan Kumar- pp. 4-7 https://doi.org/10.48550/arXiv.2403.04773	2	

IV	Aspects (Expressing the Universe)		8	15
	13	Introduction	2	
	14	The Red Room-H. G Wells https://gutenberg.org/cache/epub/23218/pg23218.txt https://www.youtube.com/watch?v=Y-eUSgkmhgl	2	
	15	Writing your Academic Statement of Purpose https://gradschool.cornell.edu/diversity-inclusion/recruitment/prospective-learners/writing-your-statement-of-purpose/	2	
	16	Understanding and Preparing your Personal Statement https://gradschool.cornell.edu/diversity-inclusion/recruitment/prospective-learners/personal-statements/	2	
V	Practicum		30	
	1	Module I: 1. Make the learners listen to the Ted Talk and discuss. 2. Conduct an imaginary interview with any scientist and prepare a transcript. 3. Organise a debate on any topic derived from the study. 4. Ask the learners to deliver a speech based on the prescribed poem. 5. Make the learners listen to the rendition of any poem and make a comprehensive summary of it. 6. Make the learners listen to other poems of the same theme. 7. Divide the learners into different groups and arrange a discussion on any environment-related topic of contemporary relevance. 8. Ask the learners to tell their views about the relationship between man and nature. 9. Identify the major issues presented in the documentary and discuss it in a group.	7	
	2	Module II: 1. Arrange a group discussion, making learners share their views, thoughts and questions about the importance of secularism. 2. Ask the learners to read other essays on scientific temper. 3. Ask the learners to prepare a critical review of any article they found in the text- 'Angels, Devils and Science'. 4. Organise a discussion on climate change and prepare a report. 5. Create slogans/ posters related to environmental protection. 6. Prepare biography- Carl Sagan 7. Ask the learners to identify and collect information on Biochemistry and its developments through the 20th century. 8. Write a short note on 'Light on a Dark Lady', foregrounding major arguments evolved from the write-up. 9. Ask the learners to differentiate between social and biological aspects of human life.	8	

3	Module III: 1. After listening, encourage learners to share their emotional responses and interpretations of the poem. 2. Reflect on a time when you found peace in nature. Describe the experience through journaling or personal retelling. 3. Ask the learners to identify common phrases or idiomatic expressions related to nature. (Eg: beat around the bush, barking up the wrong tree, a ray of sunshine, etc) 4. After listening, facilitate a discussion, prompting learners to share their views and reactions to the story. 5. Let them enact the story after preparing the dialogue. 6. Ask the learners to choose a character from the story and retell the story from their perspective. 7. Identify the contemporaries of C V Raman and prepare biographies of any two of your choice. 8. Organise group discussion on Science and Society. 9. Read the entire article and summarise the major points in the classroom.	8	
4	Module IV: 1. Make the learners identify the use of phrases and phrasal prepositions in the short story and write it down. 2. Ask the learners to write their versions of the story and ask them to read it in the class. 3. Collect stories on the myths regarding the origin of Earth. 4. Organise a discussion on youth and scientific temper. 5. Ask the learners to write a statement of purpose seeking admission to a postgraduate programme and read it in the class. 6. Ask the learners to write a personal statement. 7. Peer reviews the personal statement written by the learners. 8. Create a resume based on both your Statement of Purpose and personal statement. 9. Organise a mock job fare based on the professional SOPs collected from the learners.	7	

Note: The course is divided into five modules, with four having total 16 fixed units and one open-ended module with a variable number of units. There are total 30 transaction hours for the fixed modules and 30 hours for the open-ended one. Internal assessments (25 marks) are split between the open-ended module (15 marks) and the fixed modules (10 marks). The final exam, however, covers only the 16 units from the fixed modules.

MODULE 1 - Perceptions (Unlocking the Cosmic Secrets)

Stephen Hawking's TED Talk – Questioning the Universe

‘The power of human thought and curiosity can help us understand the universe and ensure our survival.’ – Stephen Hawking

- About the Speaker – Stephen Hawking
- Born in 1948, passed away in 2018, from Oxford, England.
- Famous physicist, cosmologist, and author.
- Studied at Oxford University (Physics) and Cambridge University (PhD in Cosmology).
- Known for:
 - Discovering Hawking Radiation (black holes emit radiation).
 - Research on black holes and singularities (points where gravity is infinite).
 - Bridging general relativity with quantum mechanics.
- Famous books:
 - A Brief History of Time
 - The Universe in a Nutshell
 - A Briefer History of Time

Summary of the Talk – “Questioning the Universe” by Stephen Hawking

- In his talk, Stephen Hawking discusses some of the biggest questions about the universe. He explains that the universe is expanding and likely began with the Big Bang around 15 billion years ago. Under special conditions, time can behave like space, which means the universe might have created itself from nothing.
- Hawking also talks about the possibility of life on other planets. Although the universe is very large, we still have no evidence of alien life. Scientists like those at SETI are searching for signals, but none have been found yet.
- Lastly, he warns that Earth is at risk from threats like climate change, wars, and asteroids. To survive in the long term, humans may need to explore and live in space. Hawking believes that curiosity and science are the keys to understanding the universe and protecting our future.

Detailed Notes

How Did the Universe Begin?

- Stephen Hawking explained that the universe is not static but constantly expanding. This means it must have started from a single point, which led to the Big Bang about 15 billion years ago.
- To fully understand the universe, we need to know both the laws of nature and the initial conditions at the beginning of time.
- Under extreme conditions like those in the early universe, time behaves like space, which allows the possibility that the universe could have created itself from nothing, without needing a creator.

Is There Life Elsewhere in the Universe?

- The universe contains billions of galaxies, stars, and planets, making it likely that life exists elsewhere besides Earth. However, scientists have not yet found any direct evidence of extraterrestrial life.
- Organizations like SETI (Search for Extraterrestrial Intelligence) have been searching for radio signals from alien civilizations, but no confirmed contact has been made.
- Hawking mentions that although the idea of alien life is fascinating, the silence from space raises important questions, and the search must continue using advanced technology.

What Is the Future of the Human Race?

- Hawking warns that Earth faces several serious risks like nuclear war, asteroid impacts, pandemics, and climate change. These threats could one day make Earth uninhabitable.
- To ensure the survival of humanity, we may need to explore and colonize other planets. Human life in space could be the next step for long-term survival.
- Hawking believes that scientific exploration and space research are essential. He encourages future generations to stay curious and to keep questioning the universe.

Above Pate Valley" by Gary Snyder,

Short Summary – Above Pate Valley by Gary Snyder

- In the poem Above Pate Valley, Gary Snyder reflects on a moment in the wilderness while hiking through a mountainous region. As he walks through a snow-edged meadow, he discovers a piece of obsidian and then thousands of broken arrowheads, signs of ancient human presence. The poem connects the natural landscape with deep time, showing how nature and human history are layered together. Snyder uses vivid imagery and free verse to express a sense of awe at nature's beauty and history, reminding us of the ancient footprints left behind by early humans.

Detailed Notes

- Gary Snyder is an American poet known for writing about nature, Buddhism, and the environment. He was part of the Beat Generation and the San Francisco Renaissance in the 1950s. His poems often connect nature, human history, and spiritual ideas.
- The poem is set in the mountains above Pate Valley, a place filled with trees, rocks, snow, and meadows. It shows the beauty and stillness of nature. The setting helps the poet reflect on the past and the deep history of the land.
- The speaker walks through a mountain trail with others, passing trees, rocks, and snow. He finds a piece of black volcanic glass (obsidian) and many broken arrowheads in the grass. This discovery shows that ancient people once lived and hunted in the same place thousands of years ago.
- The poem shows the connection between nature and human history. It reminds us that people have lived in harmony with nature for a long time. It also explores the idea of deep time, where the past and present exist together in the same space.

- The tone of the poem is quiet, thoughtful, and respectful. The poet feels a deep sense of wonder about the ancient past and nature's beauty. The mood is peaceful and reflective, as if the speaker is learning from the land.
- The poem tells us that nature holds stories from the past, and we should be aware of them. Even a simple walk can connect us to thousands of years of human history. It teaches us to respect nature and see it as something sacred and timeless.

"The Last Stand" directed by Peter Von Puttkamer

Short Summary – The Last Stand

- The Last Stand is a powerful environmental documentary directed by Peter Von Puttkamer. It explores the urgent issue of deforestation of old-growth forests in Fairy Creek, British Columbia. The film highlights the protests by environmental activists and Indigenous voices, the ecological value of ancient forests, and offers sustainable solutions to fight climate change and forest loss.

Detailed Notes

- Peter Von Puttkamer is a Canadian filmmaker known for documentaries about Indigenous communities and the environment. His work appears on major platforms like National Geographic and Discovery. He is currently involved with Eco-flix, a platform focused on conservation films.
- The Last Stand highlights the destruction of ancient old-growth forests in Fairy Creek, British Columbia. These forests are important because they store carbon, support biodiversity, and regulate climate. The film shows how only a small fraction of such forests remain undisturbed.
- The film follows forest defenders like Maple, Icel Dobell, and Que Lahn, along with scientists like Wade Davis. They protest logging activities by companies like TealJones, saying that cutting ancient trees is harmful and short-sighted. The activists argue for protecting these forests to help fight climate change and biodiversity loss.
- The film includes voices from the Pacheedaht First Nation, showing that Indigenous views are not all the same. Some community leaders, like Bill Jones, strongly oppose logging. The documentary respects the complexity of Indigenous views and shows their connection to the land.
- The documentary also explores Living Carbon, a Silicon Valley company creating genetically modified trees that store more carbon. This technology could help restore ecosystems faster. Still, it raises questions about the balance between natural and artificial solutions.
- The film ends with a call for cultural change in how we view and treat the Earth. It suggests we must think more like Indigenous communities, live in balance with nature, and support smaller, sustainable solutions. Protecting forests, planting trees, and avoiding harmful practices are key steps forward.

MODULE 2 - Dimensions (Science, Society and Environment)

Science and Dogma by PM Bhargava

- In this essay, Pushpa M. Bhargava explores the conflict between science and dogma. He explains that while science encourages questioning and evidence-based thinking, dogma is based on blind belief and fear. Bhargava argues that true progress in society depends on developing a scientific temper, rejecting harmful beliefs, and encouraging critical thinking.
- Pushpa M. Bhargava was a leading Indian scientist and a strong supporter of scientific thinking. He was the founder of the Centre for Cellular and Molecular Biology (CCMB) in Hyderabad. In 2015, he returned his Padma Bhushan award to protest against rising intolerance and suppression of free thought in India.
- The essay explains the difference between science and dogma and why it is important to encourage critical thinking in society. Bhargava uses the example of human origin to show how science and religion offer different explanations. He believes that scientific temper is necessary for a better and more just society.
- Science is based on evidence, questioning, and continuous testing. It accepts that knowledge can change when new facts are discovered. Dogma, on the other hand, is based on fixed beliefs that cannot be questioned, even when they go against evidence.
- Both science and religion started as ways for humans to understand the world and existence. In the beginning, people used myths and beliefs to explain natural events. Over time, science developed a systematic method of inquiry, while religion often remained tied to tradition and authority.
- Dogmas like rebirth or the soul have no scientific proof and often lead to social harm. For example, the caste system can be justified by the idea of karma from a past life, making people accept injustice without questioning. Bhargava warns that such beliefs stop people from thinking for themselves.
- Even today, dogmatic beliefs affect our actions and decisions in daily life. People may follow rituals or practices that have no logical or scientific basis. These beliefs are often passed down without being questioned.
- Bhargava argues that the privileged classes promote dogma to keep power and control over others. When people don't question beliefs, they are easier to control. Encouraging a scientific mindset helps people become more aware and less easily manipulated.
- The essay ends with a call to reject blind belief and adopt scientific thinking. True progress comes from questioning what we are taught and accepting only what is proven or helpful. A scientific temper makes society more equal, rational, and just.

"The Dangers of Climate Change" – Excerpts from Carl Sagan's Cosmos

"Our planet's delicate balance is in our hands. What we do today decides the future of life on Earth"

Short Summary – The Dangers of Climate Change by Carl Sagan

- In this excerpt from the fourth chapter of Cosmos, Carl Sagan explores how both natural forces and human activities shape the environment. He warns that human actions like burning fossil fuels and deforestation are disturbing Earth's delicate

climate balance. By comparing Earth's processes with those of other planets, Sagan urges us to act responsibly to protect the only home we have.

Detailed Notes

- Carl Sagan (1934–1996) was a famous American astronomer and science communicator. He was known for making science accessible to the public through books, lectures, and TV shows. His most well-known work is *Cosmos* (1980), and he also received the Pulitzer Prize for *The Dragons of Eden*.
- This excerpt is from Chapter 4: "Heaven and Hell" of *Cosmos* (1980). The book blends science and philosophy to explore the universe and our place in it. Sagan writes in a poetic yet scientific style, making complex ideas easier to understand.
- Sagan explains that Earth's environment is shaped by both slow natural processes like erosion and sudden events like floods. He uses the example of the Sphinx in Egypt, worn down by sand and rain, and Cleopatra's Needle in New York, damaged by pollution. This shows how both nature and human impact shape our world over time.
- Sagan compares Earth's climate and geography to other planets like Mars and Io. These planets also show signs of slow changes (like erosion) and violent events (like volcanic activity). Such comparisons help us understand that Earth is unique but not isolated in its environmental processes.
- The greenhouse effect on Earth—caused by carbon dioxide and water vapour—keeps our planet warm and livable. Without it, Earth would be too cold for liquid water and life. However, this balance is fragile and now threatened by human actions.
- Activities like burning fossil fuels, deforestation, and industrial pollution are increasing carbon dioxide in the atmosphere. These changes can intensify the greenhouse effect, leading to global warming and climate change. Sagan warns that these human actions, if unchecked, could damage Earth's climate permanently.
- Sagan's main message is that humans have the power to change the planet's climate, just like natural forces do. But without scientific awareness and responsible action, we risk destroying the environment that supports life. He combines science with a moral call to protect Earth for future generations.

Light on a Dark Lady – Anne Piper Trends in Biochemical Sciences, pp. 151–154

- Anne Piper's article "Light on a Dark Lady" is a biographical and historical account that focuses on the life, scientific contributions, and legacy of Rosalind Franklin. The article aims to reassess Franklin's role in the discovery of the structure of DNA and to correct the historical neglect and misunderstanding surrounding her work. Piper attempts to bring recognition to Franklin by highlighting both her scientific excellence and the circumstances that led to her being overlooked during her lifetime.
- Rosalind Franklin was a British physical chemist and X-ray crystallographer whose work played a crucial role in understanding the molecular structure of DNA. She worked at King's College London during the early 1950s, where she conducted advanced research using X-ray diffraction techniques to study DNA fibers. Her work

produced some of the clearest and most detailed images of DNA ever recorded at that time, including the famous X-ray diffraction photograph known as “Photo 51.”

- In the article, Piper emphasizes that Franklin’s experimental data provided essential evidence for the double-helix structure of DNA. Franklin’s photographs and calculations clearly indicated that DNA had a helical structure with specific dimensions. These findings were central to the model later proposed by James Watson and Francis Crick in 1953. However, Franklin did not receive equal credit for this discovery, even though her data were used without her direct knowledge or consent. Piper highlights this issue to draw attention to questions of scientific ethics and fairness in the sharing of research information.
- Anne Piper also presents Rosalind Franklin as a highly disciplined, methodical, and independent scientist. Franklin was known for her precision, intellectual honesty, and insistence on experimental proof before drawing conclusions. While these qualities made her an excellent scientist, they also contributed to professional tensions with some of her colleagues, particularly in a male-dominated scientific environment. Piper suggests that Franklin’s strong personality was often misunderstood and unfairly criticized, rather than appreciated as a mark of scientific integrity.
- A major theme of the article is the impact of gender bias in science. Piper explains that Franklin worked at a time when women scientists were frequently marginalized and excluded from full recognition. Despite her significant contributions, Franklin was often treated as a subordinate rather than an equal collaborator. This gender bias played an important role in shaping how her work was perceived and credited. The article thus places Franklin’s experience within the broader social and historical context of women in mid-twentieth-century science.
- The article also discusses Franklin’s exclusion from the Nobel Prize awarded in 1962 to Watson, Crick, and Maurice Wilkins. Although the Nobel Prize is not awarded posthumously and Franklin had died in 1958, Piper implies that her contributions were not fully acknowledged even before her death. This omission further reflects the lack of recognition she faced during her career.
- Anne Piper’s essay contributes to the modern re-evaluation of Rosalind Franklin’s legacy. Today, Franklin is widely recognized as a key figure in molecular biology, not only for her work on DNA but also for her later research on viruses. Piper’s article helps restore Franklin’s rightful place in scientific history by shedding light on her achievements and challenging earlier narratives that minimized her role.
- In conclusion, “Light on a Dark Lady” portrays Rosalind Franklin as a brilliant and dedicated scientist whose work was fundamental to one of the greatest discoveries in modern biology. The article highlights issues of scientific credit, gender discrimination, and historical representation, making it both a scientific and social commentary. Piper’s work encourages readers and students to appreciate Franklin’s contribution and to understand the importance of fairness and recognition in scientific research.

MODULE 3 - Viewpoints (Exploring Scientific Pathways)

The Peace of Wild Things – Wendell Berry

- About the Poet:
Wendell Berry is an American poet and writer. He writes mainly about nature and human life. His poems show the importance of living close to nature. He believes
- The main theme of the poem is peace found in nature. The poet feels fear and worry about the future. He goes to nature to escape his anxiety. Nature gives him calmness and relief.
- At the beginning of the poem, the poet is full of fear. He worries about the future and feels restless. He is unable to sleep peacefully at night. His mind is disturbed and tired.
- “Wild things” refer to animals living in nature. They live freely without fear or worry. They do not think about the future. Their peaceful life attracts the poet.
- Humans worry about tomorrow and suffer from fear. They think too much about loss and grief. Wild animals live in the present moment. They remain calm and peaceful.
- Nature plays a healing role in the poem. It gives the poet peace and comfort. By watching animals, water, and stars, he feels relaxed. Nature frees him from fear for some time.
- Darkness in the poem represents fear and anxiety. The poet comes out of darkness by going into nature. Light and stars give him hope. They make him feel safe and calm.
- The peace the poet feels is deep but temporary. It helps him forget his worries for a short time. Nature does not solve his problems permanently. However, it gives him mental rest.
- The poem teaches us that nature can heal the human mind. It shows that a simple life is peaceful. Humans should learn from nature. Living close to nature reduces fear and stress.

A Day in the Country – Anton Chekhov

- Anton Chekhov was a famous Russian short story writer and playwright. He wrote about ordinary people and real life situations. His writing is simple but meaningful. He often showed human emotions with sympathy.
- In the beginning of the story a beggar girl named Fyokla, who is six years old comes running through a village. The village is preparing for an approaching storm. She addresses everyone as ‘uncle’. She is searching for some particular person. She finally finds Terenty in the kitchen-garden. He is a ‘tall old man with a thin, pock-marked face, very long legs, and bare feet, dressed in a woman’s tattered jacket’. He does not look like a hero. But Fyokla is searching desperately for someone to help in freeing her brother Danilka, whose hand is stuck in a tree.
- Terenty does not give importance to the approaching storm and talking reassuringly in fatherly tones he goes to free Fyokla’s brother. The story tells us that Terenty ‘answers all questions, and there is no secret in Nature which baffles him. He knows everything’. The writer further adds that indeed ‘all the villagers, generally speaking, know as much as he does. But the difference is that Terenty is willing to share his knowledge and time with the two orphan children. The children love him for this reason. The two children retire to a deserted barn after

spending the day with Terenty. And Terenty goes to the tavern. Chekhov further talks about Terenty's sincerity and love for the two orphan children. Terenty comes back later and places bread under their heads making the sign of the cross while they are asleep. In this way Terenty tries to make the lives of Fyokla and Danilka, a little better than his own.

- The story teaches that kindness and human connection are more valuable than wealth. Even in a world of suffering and neglect, small acts of love and wisdom can provide dignity, comfort, and hope. Chekhov emphasizes that nature itself can be a teacher and healer when humans live attentively and compassionately.
- A Day in the Country is a realist short story focusing on rural poverty and human kindness. Terenty is central as a symbol of compassion and practical wisdom. Chekhov blends themes of suffering, nature, and innocence to highlight life's contrasts. The story ends on a note of temporary peace, showing that even short-lived acts of kindness have lasting impact.

C. V. Raman as a Science Communicator – G. V. Pavan Kumar

- G. V. Pavan Kumar is a writer who studies the history of science. In this article, he explains C. V. Raman's role as a science communicator. He presents Raman not only as a scientist but also as a teacher and speaker. The article gives a historical view of Raman's work.
- C. V. Raman was a great Indian physicist. He discovered the Raman Effect and won the Nobel Prize in 1930. He strongly believed in the importance of science for national development. He wanted science to reach common people.
- C. V. Raman was an excellent communicator of science. He explained scientific ideas in simple language. He used lectures, writings, and demonstrations to spread scientific knowledge. His aim was to create scientific awareness among people.
- Raman avoided complex technical terms while speaking to the public. He used everyday examples to explain scientific concepts. This made science interesting and easy to understand. His style attracted students and general audiences.
- Raman delivered many public lectures across India. He often used live experiments and demonstrations. These methods made his lectures lively and effective. People easily understood science through his talks.
- Raman was a passionate teacher. He encouraged students to ask questions and think independently. He inspired young minds to take interest in science. Many students were motivated by his teaching.
- Raman believed science was essential for India's progress. He wanted Indians to develop a scientific attitude. He spoke about self-reliance in scientific research. He connected science with nation-building.
- The article presents Raman as a pioneer of science communication in India. At a time when science was limited to experts, Raman reached the masses. His efforts helped popularize science. He played a major role in shaping scientific culture in India.
- The article shows that scientists should also be communicators. It highlights the importance of sharing scientific knowledge with society. Raman's life is shown as an example to future scientists. Science communication is necessary for social progress.

MODULE 4 - Aspects (Expressing the Universe)

The Red Room – H. G. Wells

- H. G. Wells was a famous English writer. He is known for his science fiction and short stories. His works often explore fear, science, and human psychology. He uses imagination to convey deeper meanings.
- “The Red Room” is a short horror story. It is about a man who visits a haunted castle. He decides to spend a night in the Red Room. The story focuses on fear and the human mind.
- The story is set in an old, dark castle. The Red Room is believed to be haunted. The atmosphere is gloomy and frightening. The setting creates suspense and fear.
- The main character is a young and confident man. He does not believe in ghosts. He thinks fear comes from imagination. His confidence is tested in the Red Room.
- The Red Room is large and dimly lit. It contains old furniture and red-colored decorations. The room is filled with shadows. The red color increases the sense of fear.
- The narrator lights candles to remove darkness. However, the shadows seem to increase. He becomes nervous and confused. His fear grows as the room becomes darker.
- There is no ghost in the Red Room. The real cause of fear is darkness. The narrator realizes fear is created by the human mind. Fear exists even without danger.
- The narrator panics and moves wildly in the dark. He knocks over the candles. The room becomes completely dark. He faints due to extreme fear.
- The main theme is psychological fear. The story shows how fear controls the human mind. It explains that fear is often imaginary. Darkness creates fear more than ghosts.
- The story teaches that fear is born in the mind. Humans fear the unknown. Courage alone is not enough to defeat fear. Understanding fear is important.

Writing your Academic Statement of Purpose

- What is an Academic Statement of Purpose (ASOP)?

An Academic Statement of Purpose is a formal essay that you must submit with your graduate school application. It is your main opportunity to explain your academic goals, background, and preparation for the program you are applying to. The admissions committee uses it to see if your academic interests and experience match the program’s expectations.

- Your Academic Statement of Purpose is one of the most important parts of your application because it:

Helps reviewers understand your academic interests.

Shows what makes you unique compared with other applicants.

Demonstrates whether you are a good fit for the program.

Reveals your communication skills and clarity of thought.

- What to Include in Your ASOP

1. Introduction & Academic Interests

Start by introducing yourself and explaining your main academic interests. Mention what field you want to study and why you chose it. Describe how your interest developed over time.

2. Academic Background and Preparation

Describe your relevant coursework, research, or lab experiences. Include skills you gained from projects, papers, presentations, or internships. Provide specific examples rather than general statements.

3. Research Experience

If you have done research, explain:

- What your research was about.
 - Your role in the project.
 - What you learned from it.
- Mention what challenges you faced and how you overcame them, showing persistence and problem-solving ability.

4. Fit with the Program

Explain why you are a good match for this particular graduate program. Show that you have researched the program by referring to:

- Specific faculty members you want to work with.
 - Research themes or labs at the university.
 - Particular courses or opportunities that attract you.
- This shows the committee that you've carefully chosen their program.

5. Future Goals

Clearly state your academic and professional goals. Explain how the program will help you achieve these goals. Describe what you plan to do after completing graduate school.

- Tips for Writing Your ASOP

- ✓ Follow the instructions carefully, as requirements may differ by program.
- ✓ Keep your essay focused on academic and research topics rather than personal storytelling.
- ✓ Use clear, confident, and positive language.

- ✓ Proofread multiple times and consider feedback from professors or advisors.
- ✓ Keep your statement to about 1–2 pages unless the program specifies otherwise.

- Important Reminders

- Your ASOP should NOT duplicate your resume or transcript; it should explain what those documents do not show—your motivations, reasoning, and academic vision.
- Be honest and specific, and avoid vague or generic statements.
- Tailor your statement for each program rather than using a generic version for all applications.

Understanding and Preparing Your Personal Statement

- The Personal Statement is one of the two main essays required in Cornell's graduate application, the other being the Academic Statement of Purpose.
- Your Personal Statement should tell the admissions committee about you as a whole person and explain how your background and experiences influenced your decision to pursue a graduate degree. You should describe important experiences in your life, personal or professional, that shaped your motivations and goals for graduate school.
- The Personal Statement should also show how you will contribute to Cornell's community of inclusion, belonging, and respect, where people from different backgrounds and perspectives can learn and work together positively.
- You may include examples of leadership, service, teamwork, resilience, persistence, collaboration, and engagement with others in your response.
- If you have faced challenges, barriers, or gaps in your academic record, you can briefly explain them and focus on how you overcame or learned from those experiences.
- Your Personal Statement should be distinct from your Academic Statement of Purpose; it should complement it by focusing on your personal background, experiences, values, and contributions rather than only on academic or research interests.
- In your writing, make sure your statement reflects your unique perspective and strengths, and shows how you would be a positive addition to Cornell's academic and social community.

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