IP Consultores

Where Imagination is the Best Asset

English Conversation Club
2024 edition
The Tech Forum

Syllabus

At **IP Consultores**, we envision making North America, Latin America, and the Caribbean the most competitive region of the 21st century in global ecosystems of innovation, entrepreneurship, and creativity. In this context, we have implemented the English Conversation Club, which aims to help university students in STEM fields develop their English-speaking skills while learning about various technological topics.

Different texts related to artificial intelligence, robotics, digital innovation, blockchain, cryptocurrencies, cybersecurity, aerospace innovations, telemedicine, electric vehicles, the Internet of Things, and quantum computing will be discussed and analyzed during the Club sessions. If you are a student in any STEM field and are interested in improving your English conversation skills, you will be able to meet other students who share your interests while enhancing your English proficiency.

Duration: From September 11 to November 27, 2024.

Schedule: Every Wednesday and Friday, from 18:00 to 19:30 (CST).

At the end, a Certificate of Attendance will be granted with at least 80% participation.

1st Week – Welcome and Introductions

During this session, participants will introduce themselves, sharing their names, backgrounds, and interests to help us get to know each other better. Following the introductions, we will outline the club's dynamics and program. This includes how sessions will be structured, the types of topics and articles we'll discuss, and the goals we aim to achieve. We'll also explain the interactive format, where everyone is encouraged to contribute, ask questions, and engage in discussions. We aim to create a collaborative and supportive environment that fosters language learning and meaningful conversation.

September 11 – **Introduction, Program and Rules.**

Discussion Questions:

1. What interests you about technology and science? Are there any topics or trends you find intriguing or would like to learn more about?
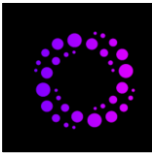
2. How do you think advancements in technology and science might affect our daily lives soon? Can you think of any recent changes you've noticed?
3. Have you ever come across a technology or scientific concept that you found difficult to understand? How did you approach learning more about it?
4. Why do you think it's important to discuss and understand new developments in technology and science, even if you're not a specialist in the field?
5. What are some of your favorite ways to stay informed about new technologies or scientific discoveries? Do you prefer reading articles, watching videos, or other methods?

Digital Innovation

During this session, we will explore the concept of digital transformation, focusing on its meaning, importance, challenges, and impact on businesses today. We will define digital transformation and examine why it has become a critical priority for companies across all industries. We will discuss real-world examples of businesses that have successfully navigated digital transformation, identifying the key factors contributing to their success.
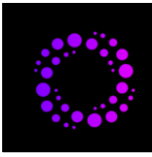
September 13 – **What is Digital Transformation?** by McKinsey & Company.

Discussion Questions:

1. What does digital transformation mean, and why is it important for businesses today?
2. Can you think of any examples of companies that have successfully undergone digital transformation? What were the key factors in their success?
3. What are some common challenges companies face during digital transformation, and how can they overcome them?
4. How do you think digital transformation affects employees and company culture?
5. What role does leadership play in driving digital transformation within an organization?

2nd Week - Artificial Intelligence

During this session, we will explore the complexities of the generative AI marketplace. Participants will discuss the balance between openness and control in AI development, the impact of competition on innovation, and the role of regulatory frameworks in managing ethical concerns. We will also address potential risks like misinformation

and bias, and brainstorm solutions to mitigate these issues. By engaging with these topics, attendees will gain insights into the evolving landscape of AI and its implications for society and business.

September 18 – **2023: A Big Year for Artificial Intelligence** by VOA Learning English.

Discussion Questions:

1. What are some of the most significant advancements in artificial intelligence (AI) mentioned in the article, and how do they impact everyday life?
2. The article discusses both the benefits and potential risks of AI technologies. What do you think are the biggest advantages and disadvantages of AI in society?
3. How do you think the development of AI, such as ChatGPT, will change the way we communicate and interact with technology in the future?
4. The article mentions the use of AI in creative fields, like writing and art. Do you think AI can truly replicate human creativity, or are there limitations?
5. Considering the rapid growth of AI, what measures do you think should be in place to ensure it is developed and used ethically and responsibly?

September 20 – **Openness, Control, and Competition in the Generative AI Marketplace** by MIT Sloan School of Management.

Discussion Questions:

1. What does the article suggest about the balance between openness and control in the development of generative AI models? Why is this balance important?
2. How does competition in the generative AI marketplace influence innovation and development, according to the article? Can too much competition be a problem?
3. What role do regulatory frameworks play in shaping the development and use of generative AI, as highlighted in the article? Do you think current regulations are adequate?
4. The article mentions the potential risks associated with generative AI, such as misinformation and bias. What do you think are the most critical steps to mitigate these risks?
5. How do you see the future of generative AI evolving in terms of accessibility and control? Should AI technologies be made more widely accessible, or should there be tighter controls?
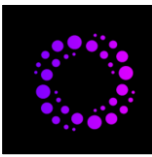
3rd Week - Robotics

During this session, we will discuss the future of humanoid robotics. Participants will explore technological advancements, industry impacts, ethical considerations, and the influence of humanoid robots on human labor and social dynamics, fostering critical thinking in this evolving field. We will explore the development of the AI-powered humanoid robot in Figure 101, discussing its unique features, potential applications, and ethical implications. Participants will debate the readiness of society to accept such technology, its impact on various industries, and the future of human-robot collaboration.

September 25 – **The Dawn of Humanoid Robotics: A Glimpse Into the Future** by Forbes.
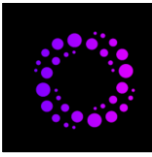
Discussion Questions:

1. What are some of the key advancements in humanoid robotics mentioned in the article, and how might these robots change our daily lives in the future?
2. The article suggests that humanoid robots could revolutionize several industries. Which industries do you think will benefit the most from humanoid robots, and why?
3. What are some of the ethical considerations around the development and deployment of humanoid robots in society? Do you think the benefits outweigh the risks?
4. How do you think humanoid robots will affect the future of human labor? Will they complement or replace human workers, and in what ways?
5. The article discusses the concept of robots having "human-like" appearances and behaviors. Do you think this is necessary for their acceptance in society, or could it create new challenges?

September 27 – **Figure 101: AI-Powered Humanoid Robot** by Interesting Engineering.

Discussion Questions:

1. What are the unique features of Figure 101 that differentiate it from other humanoid robots currently available, and how might these features enhance its applications?
2. The article mentions that Figure 101 is designed to work collaboratively with humans. In what ways do you think this robot could improve human-robot collaboration, and what challenges might arise?

3. What industries or sectors do you think could benefit the most from the deployment of AI-powered humanoid robots like Figure 101, and why?
4. The article highlights the ethical implications of developing humanoid robots with AI capabilities. What are some ethical concerns you believe should be addressed before deploying these robots widely?
5. Do you think society is ready to accept humanoid robots like Figure 101 in everyday life? What factors will influence public acceptance or resistance?

4th Week - Blockchain

During this session, we will dive into the world of blockchain technology, examining its core principles, how it functions, and its potential to transform various industries. We'll explore key applications in finance, healthcare, and supply chain management, focusing on how blockchain enhances security and transparency. Discussions will cover challenges like scalability and environmental impact, and we'll also touch on its relationship with cryptocurrencies like Bitcoin. By the end, participants will have a clearer understanding of blockchain's future possibilities and risks, as well as its broader societal implications.

October 2nd – **Blockchain Facts: What Is It, How It Works, and How It Can Be Used?** by Investopedia (From What Is a Blockchain? to How Are Blockchain Used?).

Discussion Questions

1. What is blockchain technology, and how does it fundamentally work?
2. In which industries do you think blockchain could have the most significant impact, and why?
3. How does blockchain enhance security and transparency compared to traditional systems?
4. Can blockchain technology help reduce fraud and corruption? If so, how?
5. What is the relationship between blockchain and cryptocurrencies like Bitcoin?

October 4th – **Blockchain Facts: What Is It, How It Works, and How It Can Be Used?** by Investopedia (From Pros and Cons of Blockchain to The Bottom Line).

Discussion Questions

1. What are some challenges and limitations associated with implementing blockchain on a large scale?
2. How might blockchain change the way we conduct financial transactions in the future?
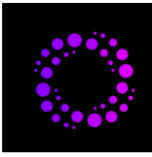
3. How can blockchain be applied outside of finance, such as in healthcare or supply chain management?
4. What are your thoughts on the environmental impact of blockchain technologies, especially regarding energy consumption?
5. Where do you see blockchain technology heading in the next decade, and what potential benefits or risks do you anticipate?

5th Week - Cryptocurrencies

During this session, we will discuss the fundamentals of cryptocurrency, focusing on how it operates and what makes it different from traditional currencies. We will explore the benefits and risks associated with using digital currencies, particularly in daily transactions. The conversation will also cover the relationship between cryptocurrency and blockchain technology, highlighting the importance of decentralization. Lastly, participants will consider the potential impact cryptocurrencies might have on the future of finance and global markets, sparking discussions on their broader economic implications.

October 9th – **Cryptocurrency Explained With Pros and Cons for Investment** by Investopedia.

Discussion Questions:

1. What is cryptocurrency, and how does it differ from traditional currencies?
2. What are some advantages and risks of using cryptocurrency in everyday transactions?
3. How do blockchain and cryptocurrency work together to ensure security and transparency?
4. What role does decentralization play in the appeal of cryptocurrencies like Bitcoin or Ethereum?
5. How do you think cryptocurrencies might shape the future of finance and global economies?

October 11 – **Top 10 Cryptocurrencies Of September 3, 2024** by Forbes Advisor.

Discussion Questions:

1. What factors determine the value of different cryptocurrencies like Bitcoin or Ethereum?
2. How do the top cryptocurrencies differ in terms of technology, use cases, and adoption?
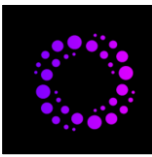
3. Why do you think certain cryptocurrencies rise to the top while others remain less popular?
4. What are the risks and benefits of investing in lesser-known cryptocurrencies?
5. How do you predict the future landscape of cryptocurrencies will evolve, and which coins might lead?

6th Week - Cybersecurity

During this session, we will explore cybersecurity, focusing on its importance in today's digital age and the main threats it addresses. We'll discuss strategies to improve online safety, the role of encryption, and how emerging technologies like AI are shaping the future of cybersecurity. We will explore essential tips for staying cyber-safe, including strategies like password management, software updates, and multi-factor authentication. Participants will also explore ways to protect themselves from phishing attacks and online scams, gaining practical knowledge on enhancing personal cybersecurity in daily life.

**October 16** – **What is cybersecurity?** by McKinsey & Company.

Discussion Questions:

1. What are the main threats that cybersecurity aims to protect against, and how do they impact individuals and businesses?
2. Why is cybersecurity becoming increasingly important in today's digital world?
3. How can companies and individuals improve their cybersecurity practices to stay safe online?
4. What role does encryption play in ensuring secure communications and data protection?
5. How do you think advancements in technology, such as AI, will impact the future of cybersecurity?

October 18 – **4 Things You Can Do To Keep Yourself Cyber Safe** by Cybersecurity & Infrastructure Security Agency.

Discussion Questions:

1. What are the most important steps individuals can take to protect themselves from cyber threats?
2. How effective are password management strategies in ensuring online safety?
3. Why is updating software and systems crucial for cybersecurity?
4. How can multi-factor authentication enhance online security?
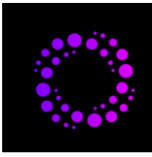
5. What are some ways to stay vigilant against phishing attacks and online scams?

7ᵗʰ Week - Aerospace

During this session, we will discuss the rise of Mexico's aerospace industry, focusing on the factors driving its growth, integration into global supply chains, and potential impacts on other sectors. Participants will explore the importance of collaboration and consider the challenges Mexico may face in maintaining this momentum. We will explore sustainable aviation as the "fourth revolution" in aerospace, discussing new technologies like electric and hydrogen-powered aircraft, regulatory roles, and public perception. Participants will consider the challenges and strategies for balancing environmental sustainability with the growing demand for air travel and innovation in the industry.

**October 23** – **The Rise of Mexico´s Aerospace Industry** by Mexico News Daily.

Discussion Questions:

1. What are the main factors contributing to the growth of Mexico's aerospace industry, as mentioned in the article? How do these factors give Mexico a competitive edge in the global market?
2. The article highlights Mexico's strategy of integrating with international aerospace supply chains. What are the potential benefits and risks of this strategy for Mexico's economy?
3. How do you think the development of the aerospace industry could impact other sectors in Mexico, such as education, manufacturing, and technology?
4. The article mentions collaboration between the government, private sector, and academia. Why is this collaboration important for the growth of Mexico's aerospace industry?
5. Considering the rapid growth of the aerospace industry in Mexico, what challenges might the country face in maintaining this momentum, and how could they be addressed?

October 25 – **Sustainable Aviation: Navigating the Fourth Revolution in Aerospace** by Forbes.

Discussion Questions:

1. What does the article describe as the "fourth revolution" in aerospace, and how does sustainable aviation play a key role in this transformation?
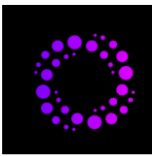
2. The article mentions several technologies driving sustainable aviation, such as electric and hydrogen-powered aircraft. What are the benefits and challenges associated with these technologies?
3. How can the aviation industry balance the need for sustainable practices with the growing demand for air travel? What strategies might be effective?
4. What roles do regulations and government policies play in promoting sustainable aviation, according to the article? Are there any specific policies you think should be implemented?
5. How do you think the public perceives the shift towards sustainable aviation? What can be done to increase awareness and support for these changes?

8ᵗʰ Week - Telemedicine

During this session, we will explore the role of telemedicine in modern healthcare. Discussions will cover its benefits, challenges, different service types, and the impact of the COVID-19 pandemic on its adoption, as well as ethical considerations regarding privacy and data security. We will explore how AI is transforming patient care and treatment. Discussions will focus on AI applications in healthcare, ethical challenges, its impact on healthcare professionals, and the potential for democratizing access to quality medical services worldwide.

October 30 – **What Is Telemedicine?** by WebMD.

Discussion Questions:

1. What are the main advantages of telemedicine, as highlighted in the article, and how do they improve access to healthcare?
2. The article outlines different types of telemedicine services, like video consultations and remote monitoring. Which of these do you think is the most effective, and why?
3. What are some of the challenges or limitations of telemedicine mentioned in the article, and how might these be addressed to improve its effectiveness?
4. How has the COVID-19 pandemic accelerated the adoption of telemedicine, according to the article? Do you think this trend will continue in the future?
5. What are some ethical considerations surrounding the use of telemedicine, especially regarding patient privacy and data security? How should these concerns be managed?

November 6ᵗʰ – **How AI Can Transform Patient Care and Treatment?** by Forbes.
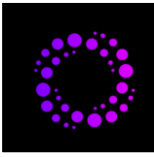
Discussion Questions:

1. What are some of the key AI currently being used to improve patient care and treatment, as mentioned in the article? Which of these applications do you find most promising?
2. The article highlights the role of AI in predictive analytics for early diagnosis. How might this technology change the approach to disease prevention and management?
3. What are some of the ethical challenges associated with integrating AI into patient care, according to the article? How can these challenges be effectively managed?
4. How does the use of AI in healthcare impact the role of human healthcare providers? Do you think AI will replace or complement human professionals, and in what ways?
5. The article suggests that AI could democratize access to quality healthcare. Do you agree with this view? What barriers might prevent this democratization from happening?
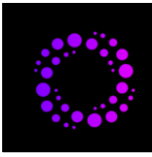
9th Week - Electric Vehicles

During this session, we will explore the benefits and challenges of electric vehicles (EVs), including their environmental impact and long-term cost savings. We will also discuss the role of infrastructure, government support, and how EVs contribute to reducing carbon emissions and combating climate change. We will explore the different types of electric vehicles (EVs) and their environmental impact. Discussions will focus on the benefits of reducing fossil fuel use, challenges like charging infrastructure, and how advancements in battery technology are shaping the future of sustainable transportation.

November 8th – **Electric Vehicle. What is an electric vehicle?** by edie.

Discussion Questions:

1. What are the key environmental benefits of electric vehicles compared to traditional gasoline-powered cars?
2. How do the upfront costs of electric vehicles compare to long-term savings from reduced fuel and maintenance expenses?
3. What challenges exist for the widespread adoption of electric vehicles globally?
4. How can governments and industries support the expansion of electric vehicle infrastructure, such as charging stations?

5. What role do electric vehicles play in reducing carbon emissions and combating climate change?

November 13 – <u>What Is an Electric Vehicle and How Does It Work?</u> by Constellation.

Discussion Questions:

1. What are the main types of electric vehicles, and how do they differ in terms of technology?
2. How does the use of electric vehicles contribute to reducing fossil fuel dependence?
3. What are the challenges facing electric vehicle adoption, particularly regarding range and charging infrastructure?
4. How do advancements in battery technology impact the performance and affordability of electric vehicles?
5. What role do you think electric vehicles will play in the future of transportation and energy sustainability?
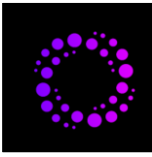
10th Week - Internet of Things

During this session, we will explore the Internet of Things (IoT), focusing on how it connects devices for increased efficiency and convenience. Discussions will cover its impact across industries, potential security and privacy concerns, and how IoT can contribute to sustainability and environmental efforts. We will discuss the Internet of Things (IoT), focusing on how it connects devices to enhance efficiency and convenience. Topics will include IoT's impact on smart cities, potential security risks, and its role in improving sustainability. Participants will explore future possibilities and challenges.

November 15 – <u>How Does the Internet of Things Work?</u> by IoTforall.

Discussion Questions

1. What is the Internet of Things (IoT), and how does it connect everyday devices?
2. How do IoT devices improve efficiency and convenience in homes and businesses?
3. What are the security and privacy concerns associated with IoT technologies?
4. In what industries do you think IoT will have the greatest impact in the coming years?
5. How can IoT contribute to sustainability and environmental conservation efforts?

November 20 – **Definition of Internet of Things (IoT)** by TechTarget.

Discussion Questions:

1. What is the Internet of Things (IoT), and how does it function in connecting devices?
2. What are the potential benefits of IoT for businesses and consumers?
3. How do you think IoT can impact the future of smart cities and infrastructure?
4. What security and privacy risks come with the widespread use of IoT?
5. How can IoT be used to improve energy efficiency and environmental sustainability?
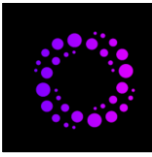
11th Week - Quantum Computing

During this session, we will explore quantum computing, discussing its key differences from classical computing and its potential impact on various industries. We'll examine the role of qubits, and the challenges of scaling quantum technologies, and consider ethical issues that could arise as the field advances. We'll explore IBM's recent quantum computing breakthrough and its implications. We'll discuss the advancements IBM made, potential impacts on various industries, challenges in scaling quantum systems, effects on AI and machine learning, and the role of collaboration in advancing this technology.

November 22 – **What Is Quantum Computing?** by IBM.

Discussion Questions:

1. What are the fundamental principles of quantum computing as explained in the article, and how do they differ from classical computing principles?
2. How does IBM's quantum computing technology aim to solve complex problems that classical computers struggle with? Can you provide specific examples mentioned in the article?
3. The article highlights various use cases for quantum computing. Which applications do you find most promising, and why? How might these applications impact our daily lives or specific industries?
4. What are some of the current challenges or limitations in quantum computing that IBM is addressing? How do these challenges affect the practical deployment of quantum computers?

5. According to the article, how is IBM working to make quantum computing more accessible to researchers and businesses? What roles do initiatives like the IBM Quantum Experience play in this effort?

November 27 – **IBM Achieves Breakthrough In Quantum Computing** by Forbes.

Discussion Questions:

1. What specific advancements in quantum computing did IBM achieve, according to the article? How do these advancements compare to previous milestones in the field?
2. How might IBM's new quantum computing capabilities impact industries such as finance, healthcare, or logistics? Can you provide examples of potential applications?
3. The article mentions IBM's focus on scaling up its quantum systems. What are some of the challenges associated with scaling quantum computers, and how might IBM address these challenges?
4. What are the implications of IBM's quantum computing breakthrough for the broader field of artificial intelligence and machine learning? Could this technology lead to significant improvements or changes in these areas?
5. The article discusses IBM's collaborative efforts with other organizations. How important is collaboration in advancing quantum computing technology, and what roles do different stakeholders play in this progress?

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