RAS AL KHAIMAH INNOVATION & SUSTAINABILITY CHALLENGE
RISC 2024

An Initiative of

STEVIN ROCK

IWAM — International Workshop on Advanced Materials

University of Bolton — Academic Centre - Ras Al Khaimah

rakez — RAS AL KHAIMAH ECONOMIC ZONE

ABOUT

- RAS AL KHAIMAH INNOVATION & SUSTAINABILITY CHALLENGE (RISC) 2024 is an initiative designed by the University of Bolton RAK (UOB) & RAKEZ Academic Zone aiming to raise awareness and challenge RAK school and university students on sustainability issues and design potential solutions.

- This challenge intends to welcome innovative ideas and concepts in support of sustainability, which is one of the themes of the 2024 IWAM conference.

- Students across all the schools & universities in RAK will be invited to join the RAK INNOVATION & SUSTAINABILITY CHALLENGE (RISC) 2024 and produce innovative solutions to the problems identified.

OVERVIEW

Open to: All students across schools & universities in Ras al Khaimah

Goal: Address sustainability challenges through innovative solutions

Highlights:

- Showcase student creativity & ingenuity
- Emphasis on practical, real-world solutions
- Networking with industry experts

Impact: Align with global sustainability goals & COP28.

Call to Action: Be today's innovator for a sustainable tomorrow!

TIMELINE

1 — Invitations to Schools/Universities & Industries

January 5, 2024

2 — Registration Deadline

January 15, 2024

3 — Submission Deadline

January 22, 2024

4 — Review

February 3, 2024

5 — Notification of acceptance

February 7, 2024

6 — RISC on Stage

February 15, 2024

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ECONOMIC ZONE

Main Theme

Sustainability Through Innovation

Subthemes:

- **Energy**

- **Environment**

- **Sustainability**

- **Water (resources)**

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ABOUT THE CHALLENGE

- Open to University Students

- Can participate in all 6 categories

- Each participating schools in RAK can send 3 teams from each category.

- To enter the competition, students are required to submit an innovative idea around this theme, using creativity and originality

- Judges will select the best 5 teams in each category as winners

- The 5 shortlisted team will be provided with the opportunity to present their work at the IWAM Conference which is a prestigious event attended by Nobel Laureates, Researchers and Professors.

- The first 3 winners from the IWAM Conference will be awarded Cash Prize

—————————— **1st Place AED 1000**

—————————— **2nd Place AED 500**

—————————— **3rd Place AED 300**

RISC 2024 CHALLENGE GUIDELINES

Extensive Research :
Dive deep into current sustainability issues.
Familiarize yourself with ongoing efforts and gaps in solutions.

Innovation is Key:
Your solution should be original and groundbreaking.
Think outside the box. Old problems often need fresh perspectives.

Societal Impact:
Your solution should positively impact society.
Gauge potential public acceptance and societal benefits.

Economic Viability:
Assess the feasibility of your solution in real-world scenarios.
Consider costs, scalability, and potential economic benefits.

POSTER
COMPETITION

DESIGN YOUR

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TAG MOCKUP

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YOU USE @JOWINSKI

ERE

Poster Competition

- An arena where creativity converges with science and innovation.

- Rooted in the transformative themes of COP28, this contest serves as a beacon for students to visually encapsulate their most groundbreaking ideas, novel projects, or impactful research.

- A poster is more than just a presentation—it's a canvas that speaks volumes, telling stories of possibilities, solutions, and hope for a sustainable future.

- As the world tunes in to the dialogues of COP28, we invite the next generation of thinkers, leaders, and innovators to translate their visions onto this canvas, using the power of imagery, design, and succinct narratives.

- Dive in, explore the depths of sustainability, and showcase how your perspective aligns with global objectives.

- Let your poster be the voice that inspires change

Themes

- **"Carbon Solutions"**
  Showcase nature based solutions for carbon sequestration

- **"Community Power"**
  Emphasize decentralized renewable energy solutions

- **"The Green Hydrogen Revolution"**
  Highlight the potential of green hydrogen in decarbonizing Environmental sector

- **"Building for Tomorrow"**
  Emphasize climate resilient infrastructure by illustrating the designs that withstand changing climatic conditions

- **"Eco Mobility"**
  Showcase advancements in sustainable transportation

RISC 2024 Poster Competition Guidelines

Objective Alignment:
- Ensure your poster directly addresses and supports one or more themes.

Content:
- Clearly state the primary idea or research focus.

- Use concise, clear, and impactful text. Cite any data, research, or external sources used.

Design & Layout:
- Utilize a clean, organized layout with a logical flow.

- Incorporate high-resolution visuals (images, graphs, infographics) that complement and enhance the content.

- Stick to a consistent color palette and font scheme that maintains readability.

Size & Format:
- Posters must be designed for either A2 size paper.

- Submit digital copies in high resolution PDF format.

Originality:
- Ensure all content is original or properly credited.

- Avoid using copyrighted material unless permission is granted.

Inclusion:
- At the top, include the title of the project, names of the authors/students, and the name of the school/university

Submission Process
- Use the official submission portal

- Make sure to receive a submission confirmation.

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Judgement Criteria

- Message conveyed by the poster- 25 points

- Relevance to the theme- 20 points

- Innovation- 15 points

- Originality- 10 points

- Poster appearance- 10 points

- Artistic composition- 5 points

- Clarity- 10 points

- Creativity- 5 points

PROJECT

Project Competition

- The Project category beckons students and innovators to go beyond traditional boundaries, challenging them to conceptualize, design, and implement solutions that can revolutionize the way we perceive and interact with our environment.

- From pioneering research initiatives to groundbreaking prototypes, the Project Category is an arena where theory melds with application, producing tangible outcomes for real world problems.

- We encourage entrants to envision a more sustainable future, harnessing their academic prowess, creativity, and technological insight to shape projects that not only address current challenges but also anticipate the needs of tomorrow.

Project
University Themes

- **Carbon sequestration techniques using Nature based Solutions :**
  Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide.

- **Digital Technology for Climate Monitoring :**
  The use of AI, machine learning, and big data in monitoring environmental changes, predicting climate events, and optimizing resource use in real-time.

- **Regenerative Urban Planning :**
  Focusing on urban designs that not only reduce carbon footprints but actively contribute to a more sustainable and integrated ecosystem, from green rooftops to urban farms.

- **Industry Transition to Net-Zero :**
  Recycling and Upcycling Industrial Waste: Transforming industrial processes to minimize waste and align with a circular economy.

- **Green Mobility :**
  Efficient Transportation Accelerating the shift towards cleaner, more efficient modes of transport to reduce emissions.

RISC 2024
Project Submission Guidelines :

Project Nature:
- Can be a model, prototype, or research.

- Adherence to one of the provided themes or subthemes.

Team Composition:
- Maximum of 5 participants per team.

- Persons from different institutions cannot be a part of the same team.

Preliminary Submission:
- Must be in the form of a ppt

Presentation Details:
- Top: Title of the project, names of authors/students, and institution name.

- Visuals: Use figures, tables, and graphs if relevant.

- Language: All content must be in English/Arabic

Content:
- **Problem Statement:** Describe the problem you're addressing.

- **Objectives:** Clearly state the goals of your project.

- **Results:** Showcase the outcomes, findings, or potential impact of your project.

- **References:** Cite any sources, data, or studies that informed your project.

Submission Process:
- Use the official submission portal

- Make sure to receive a submission confirmation.

Invitations:
- Shortlisted teams will be invited for a live presentation.

RISC 2024 Project Submission Guidelines :

Team Requirements:
- All team members must be present.

- Bring your working projects, models, prototypes, or research posters.

Presentation Format:
- Duration: 5 minutes for the presentation.

- Followed by a 2-minute Q&A session.

Presentation Aids:
- Teams can use portable computing systems, presentation software, storyboards, and other visual aids.

- Responsibility for arranging and functionality of aids lies with the team.

Venue Arrangements:
- Space, tables, and electrical connections for models/prototypes will be provided.

- Ensure your projects fit within the provided space and specifications.

Judgement Criteria

- Innovation and Creativity **(20 marks)**

- Relevance to Sustainability **(20 marks)**

- Research Depth and Methodology **(15 marks)**

- Technical Execution **(15 marks)**

- Presentation and Communication **(15 marks)**

- Impact and Scalability **(15 marks)**

CASE STUDY

Case Study Competition

- This segment challenges participants to dissect real world sustainability issues, offering a platform to analyze and suggest innovative solutions.

- Grounded in evidence based research and aligned with COP28 objectives, entrants will bridge theory with practice.

- Dive deep, understand the complexities, and contribute to shaping a sustainable future.

RISC 2024
Scientific Case Study Themes

- **The Role of Urban Farming in Food Security:**
  Study the potential of rooftop farming, vertical farming, and community gardens in addressing urban food demands.

- **Pollution and Public Health in Industrial Areas:**
  Study the correlation between industrial emissions and public health, and how regulatory measures can mitigate risks.

- **Innovative Waste Management Systems:**
  Investigate emerging technologies and methodologies in managing and repurposing municipal and industrial waste.
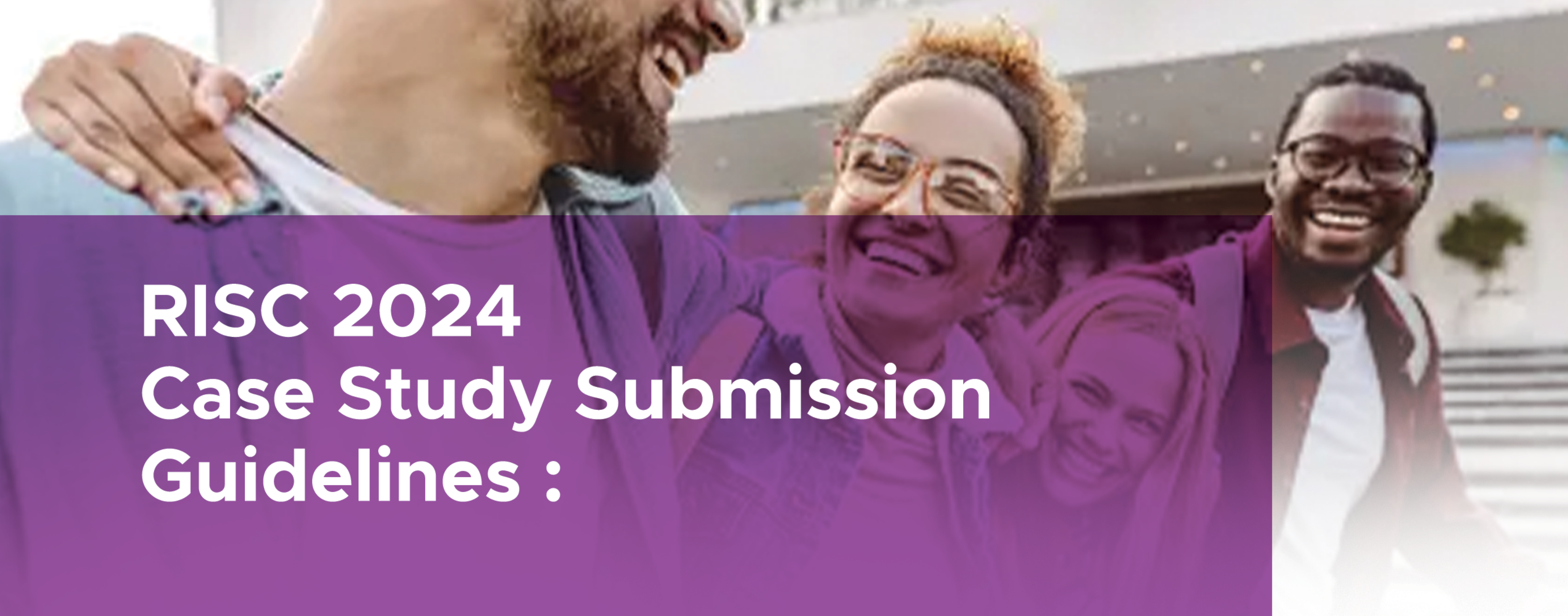
- **Carbon Neutral Aspirations:**
  Showcase industries, cities, or countries making strides towards reducing their carbon footprint.

- **Adaptive Architectures:**
  Showcase buildings or structures designed with climate adaptation in mind, be it floating houses or green roofed edifices.

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RISC 2024 Case Study Submission Guidelines :

Relevance to Theme:
- The case study should align with the overarching theme of RISC 2024 and specific focus areas defined for the year.

Format & Length:
- Submit your case study in a readable format such as PDF.
- Maintain a word limit of 2000-3000 words.

Structure:
- Begin with an abstract (not more than 250 words) summarizing the case study.
- Clearly define sections: Introduction, Problem Statement, Approach/Methodology, Results, Discussion, and Conclusion.

Originality:
- The work should be original and previously unpublished.
- Any instance of plagiarism may result in disqualification.

Citations:
- Properly cite all references and sources. Adhere to a specific citation style (e.g., APA, MLA, Chicago).

Graphics & Images:
- Embed relevant charts, graphs, and images to support your text.
- Ensure graphics are of high resolution and properly captioned.

Application Relevance:
- Highlight the practical implications and potential applications of your findings in the real world.

Team Details:
- Mention the names of all contributors, affiliations, and contact information.
- If submitted by students, include details of the educational institution.

Submission Process:
- Use the official submission portal
- Make sure to receive a submission confirmation.

Demo :
- Shortlisted contestants will be invited to showcase their case studies through a ppt presentation.

Judgement Criteria

- Problem chosen- **20 points**

- Proposed solution- **20 points**

- Design and Methods- **20 points**

- Evidence of prototype/ model design- **20 points**

- Demonstrated practicality- **10 points**

- Originality of idea and overall clarity of idea- **10 points**

"THE THIRD EYE"
PHOTOGRAPHY
CONTEST

Photography Competition

- This contest aims to spotlight moments, places, and stories that echo the vital need for sustainable living. Whether you're a novice or a seasoned shutterbug, let your photos speak volumes, narrate tales, and inspire change for a brighter tomorrow.

- Seeks to capture the profound intersection of nature, humanity, and progress through the lens of aspiring photographers. Encouraging participants to view our world with a renewed perspective.

- Photographs entered the contest must help communicate sustainability issues/solutions through imagery.

The Third Eye
Photography Contest Themes

- **Nature's Resilience:**
  Focus on nature's ability to rebound, whether it's flowers growing in urban settings or wildlife adapting to city life.

- **Human Footprint:**
  Depict the direct impact of human actions on the environment, both negative (like pollution) and positive (like afforestation).

- **Water's Essence:**
  Highlight the significance of water in our lives, showcasing its various forms or how communities come together around water bodies.
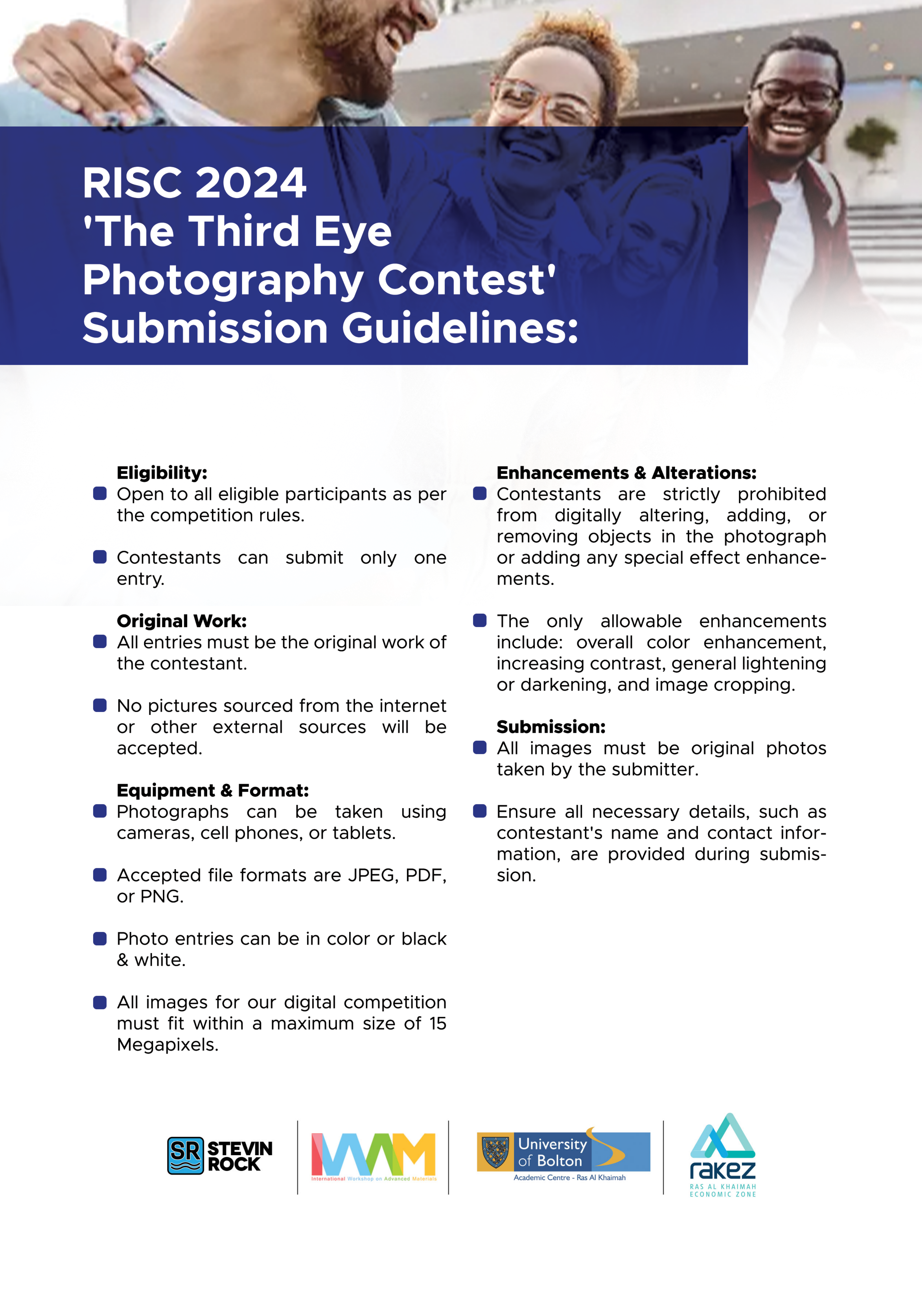
- **The Green Urban:**
  Focus on the incorporation of green spaces, plants, and trees in an urban or architectural setting.

- **Sustainable Lifestyles:**
  Showcase sustainable living practices, from eco friendly homes to communities practicing zero waste.

RISC 2024 'The Third Eye Photography Contest' Submission Guidelines:

Eligibility:
- Open to all eligible participants as per the competition rules.

- Contestants can submit only one entry.

Original Work:
- All entries must be the original work of the contestant.

- No pictures sourced from the internet or other external sources will be accepted.

Equipment & Format:
- Photographs can be taken using cameras, cell phones, or tablets.

- Accepted file formats are JPEG, PDF, or PNG.

- Photo entries can be in color or black & white.

- All images for our digital competition must fit within a maximum size of 15 Megapixels.

Enhancements & Alterations:
- Contestants are strictly prohibited from digitally altering, adding, or removing objects in the photograph or adding any special effect enhancements.

- The only allowable enhancements include: overall color enhancement, increasing contrast, general lightening or darkening, and image cropping.

Submission:
- All images must be original photos taken by the submitter.

- Ensure all necessary details, such as contestant's name and contact information, are provided during submission.

Judgement Criteria

Relevance and Interpretation of the Theme (30 marks):

- Alignment with sustainability: Does the photograph directly relate to and clearly communicate a sustainability topic or concern? (10 marks)

- Depth of message: Does the photograph convey a profound/insightful message or evoke a strong emotional response related to sustainability? (10 marks)

- Creativity and originality: Does the entry present the theme in a unique, imaginative, or innovative manner? (10 marks)

Visual Impact and Composition (25 marks):

- Aesthetic appeal: Does the photo catch the eye and hold the viewer's attention? (10 marks)

- Composition: Are the elements of the photo (e.g., lighting, colors, subjects, background) well-arranged to create a harmonious whole? Does it follow or artistically break rules of composition (e.g., rule of thirds, leading lines)? (10 marks)

- Perspective and viewpoint: How effectively does the photographer's choice of perspective or viewpoint contribute to the photograph's overall impact? (5 marks)

Technical Excellence (20 marks):

- Focus and clarity: Is the subject of the photograph in sharp focus? Is the image clear? (10 marks)

- Lighting: Does the lighting enhance the subject and the overall image? Are shadows and highlights used to good effect? (5 marks)

- Post-processing quality: Are editing techniques used effectively to enhance the photo, without overdoing effects? (5 marks)

Narrative and Context (15 marks):

- Storytelling: Does the photograph tell a story about sustainability? (8 marks)

- Contextual understanding: Is it clear where and under what circumstances the photo was taken? Does the viewer gain insight into the sustainability issue at hand? (7 marks)

Overall Impression (10 marks):

- Does the photograph leave a lasting impression? Is it memorable or powerful in its message, visual impact, or technical excellence? (10 marks)

COLORING/DRAWING
CONTEST

Coloring /Drawing Competition

- Coloring /Drawing contest aims to promote awareness in sustainability issues /solutions.

- Contestants are encouraged to present their unique perspective on sustainability and climate change, ensuring authenticity and creativity in their submissions.

RISC 2024
Coloring/Drawing Contest Themes

🟠 **Futurescape**

Imagining Tomorrow's Sustainable World
Visioning a planet where humans, technology, and nature coexist harmoniously.

🟠 **Flora and Fauna Flourish:**

Draw a world where endangered species thrive and deforested areas come back to life.

🟠 **Water Wisdom:**

Showcase the importance of water conservation and clean water for everyone.

🟠 **Cities of Tomorrow:**

Visualize a city where green roofs, vertical gardens, and efficient transportation dominate.

🟠 **Nature's Symphony:**

Illustrate the harmony between different elements of nature in a balanced environment.

Coloring/Drawing Contest Guidelines

- **This will be a on-site competition**

Medium of Art:
- Artworks can be created using the following mediums:

- **Dry Colors:** This includes crayons, colored pencils, Staedtler pencils, and dry pastels. Watercolors encompasses cake colors, watercolors, poster colors, and acrylic colors.

- **Oil-Based Colors:** Such as oil paints or canvas colors.

- **Contestants should bring coloring and drawing materials.**

- **Papers will be provided on-site**

Originality:
- All artwork must be the original work of the participant.
Any form of plagiarism will result in disqualification.

Judgement Criteria

- Interpretation and the clarity of the theme to the viewer- **30 points**

- Creativity and originality of the depicted theme- **30 points**

- Quality of artistic composition and overall design based on the theme- **20 points**

- Overall impression of the art. What is the effect of the artwork in general and as a whole? Overall, does the artwork stand on its own as a complete and outstanding work of art?- **20 points**

"PRESENT YOUR BRILLIANCE TO THE WORLD"

PRESENTATION

Presentation Competition

- Presentation category offers participants a stage to share their groundbreaking ideas and solutions for a sustainable future.

- It's more than just a presentation; it's a chance to voice your innovations, receive feedback from industry pioneers, and potentially pave the way for real world implementations.

RISC 2024
Presentation Themes

- **Public Health and Climate Change:**
  Examining the interconnectedness of climate change and public health.

- **The Green Tech Revolution:**
  Digital Solutions for a Physical World, Exploring how digital technologies can aid in addressing environmental challenges.

- **The Green Economy:**
  Sustainable business models and practices for the future.

- **Climate Resilience:**
  Adaptation strategies for communities vulnerable to climate change.

- **Conservation Ethics:**
  Balancing economic development with nature conservation.

- **Environmental Justice:**
  Addressing social and racial disparities in environmental impacts.

RISC 2024 Presentation Submission Guidelines :

Objective Alignment:
- Ensure your presentation aligns with the given themes

Content:
- Maintain a logical flow: Introduction -> Main Content -> Conclusion.
- Include credible sources and references for any data or information presented.

Design:
- Use a consistent and legible font throughout.
- ppt for high-quality visuals (images, graphs, infographics) that complement the content.
- Keep slides uncluttered. Avoid overloading them with information.

Duration:
- Keep your presentation within the allocated time of 5 minutes. Rehearse in advance to ensure timing.

Engagement:
- Maintain eye contact with the audience and show enthusiasm about your topic.

Q&A Session:
- Be prepared to address questions from the audience after your presentation.
- Offer concise and direct answers.

Professionalism:
- Dress appropriately for the event.
- Arrive early to familiarize yourself with the presentation space and equipment

Judgement Criteria

- The originality of the idea and relevance to the theme- **10 points**

- Communication skills, Clarity of speech - **10 points**

- Evidence of teamwork- **10 points**

- The impacts/solutions- **10 points**

- Research evidence- **10 points**