



Engineering for One Planet

# WORLD ENGINEERING DAY

Engineers are uniquely equipped to help achieve the UN's 17 Sustainable Development Goals!



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# SUSTAINABLE DEVELOPMENT GOALS

The United Nations' 17 Sustainable Development Goals (SDGs) represent a holistic approach to global progress, demanding a united effort to eradicate poverty and inequality alongside advancements in health, education, and sustainable economic growth. Recognizing the interconnectedness of these challenges, the SDGs emphasize tackling climate change and environmental degradation to ensure a viable future.



*Engineering for One Planet (EOP) aligns with this vision by equipping future engineers with the necessary expertise to address these complex, interrelated issues. Through this focus, EOP directly contributes to achieving the UN's ambitious agenda for a more sustainable future.*

Every March, we celebrate

# WORLD ENGINEERING DAY

*This day gives us an opportunity to pause, reflect on, and celebrate the engineers who are quietly building a better tomorrow – the heroes who weave invention and innovation into solutions for every corner of our planet.*

From delivering clean water in drought-stricken villages to building resilient cities that improve resident health and well-being, engineers are the architects of a future where prosperity and sustainability go hand-in-hand. Imagine a world where bridges span not just rivers, but gaps in inequality. Where clean air isn't a luxury, but a birthright. Where cities hum with innovation, not pollution. This isn't a utopia, it's the blueprint laid out by the United Nations' 17 Sustainable Development Goals (SDGs).

With this brochure, EOP is showcasing how engineers are intricately woven into the fabric of the United Nations' goals and directives. You may recall that the EOP Framework's learning outcomes are linked to the UN's SDGs. So, join us in exploring how engineering ingenuity offers a powerful approach to solving for each and every one of the SDGs!

And to learn how you can help engineer for a more resilient and equitable future, be sure to visit EOP's website: [www.engineeringforoneplanet.org](http://www.engineeringforoneplanet.org)



**From sustainable agriculture to resilient infrastructure, engineers design solutions that lift communities out of poverty.**

Poverty isn't just a lack of resources, it's a barrier to dreams. And engineers can break down these barriers with the delicate touch of innovation. They weave resilient infrastructure into the fabric of forgotten communities, transforming crumbling bridges into pathways to opportunity. They conjure water from drought-stricken earth, and electricity from the very sun that scorches the land. They are the storytellers of a future where poverty is a forgotten footnote, replaced by the vibrant chorus of resilient communities.



**Engineers are building food security through smart agricultural tech that increases efficiency and mitigates food waste.**

Hunger is a harsh reality faced by millions worldwide – but amidst the challenge, hope blooms thanks to the ingenuity of engineers. Smart irrigation systems, like drip technology, transform barren landscapes into oases of abundance. Picture rows of vegetables thriving on just a trickle of water, thanks to sensors that pinpoint their exact needs. This tech, developed by engineers, is rewriting the story of drought-stricken regions, turning scarcity into bountiful harvests.



**3** GOOD HEALTH  
AND WELL-BEING



**Through innovative medtech and sustainability innovations, engineers are helping to build healthier communities.**

Health and well-being aren't just a privilege for the fortunate few, but basic human rights for every single human being. No longer confined to towering buildings and sturdy bridges, engineers are wielding their tools to build a healthier world, brick by innovative brick. Imagine sparkling streams no longer carrying disease, thanks to ingenious filtration systems designed by engineers who refuse to accept waterborne illnesses as inevitable. In arid valleys, solar-powered clinics sprout like beacons of hope, offering medical care where it was once an unthinkable luxury.



**4** QUALITY  
EDUCATION



**Engineering education is embracing sustainability to equip engineers with the skill sets and mindsets to protect our planet and improve our lives.**

EOP is transforming engineering education to equip future engineers with the knowledge, skills, and ethical foundation needed to tackle complex sustainability challenges. The EOP Framework integrates sustainability principles like environmental responsibility, social justice, and circular economy thinking into core engineering curricula, equipping engineers with the skills to become changemakers, and driving innovation and designing solutions that benefit both people and the planet.



**More young women are pursuing engineering as STEM education addresses issues of accessibility and inclusivity.**

Achieving a sustainable future requires diverse perspectives and talent, and the EOP movement recognizes the crucial role of attracting more young women to engineering. STEM education initiatives are playing a vital role in this endeavor. By fostering a more accessible and inclusive STEM environment, we not only unlock the full potential of young women, but also cultivate a future generation of engineers equipped to address global challenges with a holistic and compassionate mindset.



**From water purification to innovative sanitation, engineers are ensuring that communities have access to this essential resource.**

By equipping future engineers with the necessary skills, emphasizing sustainability principles, and promoting collaboration, EOP plays a crucial role in supporting the UN's mission to achieve universal access to safe water and sanitation while ensuring a sustainable future for water resources. Together, EOP and SDG 6 offer a roadmap for a future where water scarcity and environmental degradation are no longer threats but opportunities for innovative solutions.



**7** AFFORDABLE AND  
CLEAN ENERGY



**Engineers are powering a more sustainable and prosperous future by harnessing low-cost, renewable energy sources.**

Imagine a world powered by the sun's warmth, where wind turbines dance with the breeze, and communities thrive with clean, accessible energy. The EOP community is united by a common mission: building a sustainable future for our planet. The answer lies in preparing the next generation of engineers - the architects of this future. EOP doesn't just teach students how to build; it teaches them how to build responsibly.



**8** DECENT WORK AND  
ECONOMIC GROWTH



**From sustainable manufacturing to green jobs, engineers are creating a world where prosperity and environmental responsibility go hand-in-hand.**

The future of work demands both sustainability and inclusivity. EOP goes beyond technical skills, equipping future engineers with the knowledge to not only build but to build responsibly. This includes understanding resource efficiency, sustainable manufacturing practices, and ethical considerations in the workplace. By preparing future engineers to be responsible and ethical leaders, EOP helps build a future where economic growth benefits everyone, not just the privileged few.



**Smart cities, efficient transportation, and waste-to-energy solutions – engineers are building the infrastructure for a sustainable future.**

Imagine a world where infrastructure is resilient to natural disasters, industries are sustainable and innovative, and technology empowers progress for all. EOP recognizes that engineers are crucial in shaping this future. By advocating for transformative engineering education, EOP equips future engineers with the knowledge and skills to design resilient infrastructure; champion sustainability in industry; and, embrace innovation and collaboration.



**From bridging the digital divide to designing inclusive technologies, engineers are closing the gap between the haves and have-nots.**

Imagine a world where the benefits of engineering advancements are equally accessible, regardless of background, location, or socioeconomic status. EOP recognizes that true progress requires addressing the root causes of inequality within the engineering field. EOP is not just about building a sustainable future; it's about building a just and equitable future where everyone has the opportunity to contribute and thrive. EOP sets a powerful example of how engineering can become a force for positive change.





**Engineers are building greener spaces and renewable energy grids to transform cities into hubs of sustainability.**

Imagine a world where cities are not just bustling hubs of activity, but also vibrant spaces that promote inclusivity, sustainability, and resilience. This is the vision shared by the SDG #11 and EOP. While EOP focuses on the broader principles of sustainable engineering, its core values directly foster sustainable engineering practices, promote interdisciplinary collaboration, and cultivate future generations of changemakers.



**From designing products for reusability to minimizing waste, engineers are helping close the loop on our consumption habits.**

Imagine a world where our daily lives don't generate mountains of waste, where resources are used efficiently, and responsible consumption becomes the norm. EOP recognizes that sustainable engineering goes beyond just designing efficient machines or structures. It requires considering the entire life-cycle of products, from responsible sourcing of materials to minimizing waste at the end of their lifespan - EOP promotes resource efficiency and responsible consumption while reducing waste generation.



**Engineers are leading the fight against climate change with innovations ranging from carbon capture technologies to renewable energy solutions.**

Imagine a world where the hum of factories doesn't contribute to a warming planet, where clean energy powers our cities, and where innovative solutions combat the ever-present threat of climate change. EOP isn't just about creating skilled engineers; it's about preparing them to be agents of change. By equipping engineers with the knowledge, skills, and collaborative mindset needed to address the climate emergency, EOP prepares future generations of engineers to become the architects of a sustainable future.



**From protecting coral reefs to cleaning up plastic pollution, engineers are helping to safeguard the health of our oceans.**

Imagine young engineers, inspired by EOP principles, developing innovative solutions like sustainable desalination plants to combat water scarcity in coastal communities or designing efficient filtration systems to reduce plastic pollution in the oceans. Their efforts, driven by the vision of EOP and the ambitious goals of SDG #14, contribute to a future where the ocean thrives, providing essential resources and fostering vibrant ecosystems for generations to come. By supporting EOP, we prepare future engineers to become the architects of a sustainable future.



**Engineers are finding ways to restore degraded ecosystems and preserve our biodiversity to ensure a thriving planet for all living things.**

Imagine a world where the air is clean, the forests are thriving, and biodiversity flourishes. EOP recognizes that engineers are not just problem-solvers, but also catalysts for positive change. The movement advocates for integrating sustainability principles into engineering education, ensuring future engineers possess the knowledge and skills to protect and restore ecosystems; combat desertification; halt biodiversity loss; and, so much more!



**Engineers are embracing their role in ensuring our built environment contributes to more prosperous, resilient, and equitable communities.**

Imagine a world where everyone feels safe and secure, justice prevails, and access to basic rights is a reality for all. EOP recognizes that sustainable development cannot be achieved solely through technological advancements or economic growth. It requires building fair and just societies. EOP doesn't just train engineers, it cultivates ethical and responsible leaders who emphasize the importance of considering social and environmental impacts in engineering decisions. EOP recognizes the potential for technology.



**17** PARTNERSHIPS FOR THE GOALS

**Engineers collaborate with other sectors and local leaders to address complex sustainability challenges and devise solutions that are socially just, culturally relevant, and aligned with community needs.**

Imagine a world where engineers from diverse backgrounds collaborate, where innovation knows no borders, and where partnerships fuel the journey toward a sustainable future. EOP recognizes that achieving sustainability is not a solo pursuit; it requires strong collaboration across disciplines, sectors, and nations. By fostering these partnerships and collaborative efforts, EOP and SDG 17 join forces to create a stronger foundation for sustainable development.

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