THE JUBILEE CENTER FOR EXCELLENCE IN EDUCATION (JCEE) was founded by the King Hussein Foundation in 1998, to enhance national and regional standards for education by utilizing advanced education technology and state-of-the-art testing tools. The center seeks to forge a path for educational development through innovative, interactive curricula, and stimulating training programs for students, teachers, and administrators.

Since its inception, the JCEE has adopted the best international knowledge and continues to establish partnerships with prominent international institutions, such as Berkeley University - USA, First Lego League (FLL) among others.

In 2002, the JCEE pioneered the Electronics, Robotics, and Great Exploration in Math and Sciences (GEMS) programs in public and private schools in Jordan. By the year 2011, the program had evolved into the comprehensive JCEE Science, Technology, Engineering, and Mathematics (STEM) Program.

MY JOURNEY IN JCEE STEM LAB

"This room changed my character and transformed me into another girl … I have learned to love team work, respect competitors and believe that here's a solution to every problem with perseverance and hard work… How to think and develop my skills… STEM Program turned out to be awesome!"
Rahaf Jdaitawi
Umm Al-Mu'mineen School

Currently, the program embodies the principles of STEAM (Science, Technology, Engineering, *Arts* and Mathematics) bringing in the arts components to STEM education. The arts in STEAM (including liberal arts, fine arts, music, design-thinking, and language skills) are critical components to innovation and success in the competitive global labor market, where students learn to use critical-thinking, creativity, communication, attitudes and artistic skills.

Annually, the JCEE organizes and hosts national and regional competitions, and prepares students for international competitions in STEAM, design technology, robotic sciences and renewable energy.

OUTREACH

The holistic educational approach adopted by the JCEE STEAM Program, through its two main hubs – in Amman and Irbid - with a professional mobile team, assists effectively in transforming students' attention throughout Jordan and beyond from simply passing the exams to unleashing their analytical and creative skills to find solutions to the challenges faced within their communities, countries and the world at large.

Thousands of students and teachers from different areas in Jordan, and at 11 Arab countries, have benefitted from the JCEE Program by linking academic concepts to practical applications. (See enclosed 2018 facts and figures sheets).

INCLUSION

- ✓ **PEOPLE WITH SPECIAL NEEDS**

In 2018, the JCEE developed a novel STEM curriculum in Braille and set up a special lab at the Abdullah Ben Maktoum for the visually impaired academy that provides comprehensive educational classes to visually impaired youth from all over Jordan. Additionally, a specially trained team from JCEE pioneered a STEM program for hearing-impaired students at Al Amal public school in Amman.

✓ GENDER

During the implementation of the novel JCEE programs at girls' schools, it was noted that the young female students were more eager than their male counterparts in enrolling in STEM activities. Upon the completion of the program, these young girls are now more confident and are seizing opportunities to reconsider their professional plans in the fields of Sciences.

"My daughter is very interested in "Formula 1" competition. She hopes to complete her study in Mechanical Engineering, even though she never thought about it before she had participated in the JCEE STEM Program."

-Parent, Umm Al-Mu'mineen School

✓ MARGINALIZED

JCEE focuses on the accessibility of the STEAM program to underserved youth in underprivileged communities and refugee camps. Latest accomplishments include organizing the first STEM competition in northern Jordan, where public school students including Syrians, SOS villages and UNRWA were trained and participated in the competition. The UNRWA girl's school won first place. At the 2019 Arab Robotics Competition, and the first Syrian refugee girls' team won 3rd place for the Programming Award.

In 2014, despite being told that "it was a boys' club" only, Sa'eda Shdaifat' led a team that won first place in the "App Challenge'' in Jordan, with a game that ranked 20th globally in the "edutainment" category.

ENVIRONMENTAL AWARENESS

The JCEE has been effective in promoting green energy and sustainable development solutions through its annual national competitions and by engaging in regional competitions in 5 Arab countries (Qatar, Morocco, Tunis, Palestine and Oman).

Through accreditation from a specialized US institution (FIRST | For Inspiration and Recognition of Science and Technology), the JCCE has involved over 20,000 students (6-16 years old) in researching a real-world problem and applying a combination of STEM concepts with a big dose of creativity and team building. Examples of annual themes: (2012) Food Factor, to address food safety issues in relation to fertilization and irrigation; (2007) Power Puzzle developing green renewable energy models; (*2018) Hydro Dynamics* introducing innovative gray water models and reducing consumption of scarce clean water.

STEAM PROGRAM IMPACT

An independent assessment by the Jordanian Sustainable Research and Development agency was conducted in April 2017, to highlight the effectiveness of the JCEE STEM Center/Program in northern Jordan. Major findings were:

1. 5.6% of the teachers responded that the JCEE STEM training has equipped them with new interactive and project-based teaching methodologies and techniques.
2. he students who participated in the STEM Program improved their academic achievements.
3.

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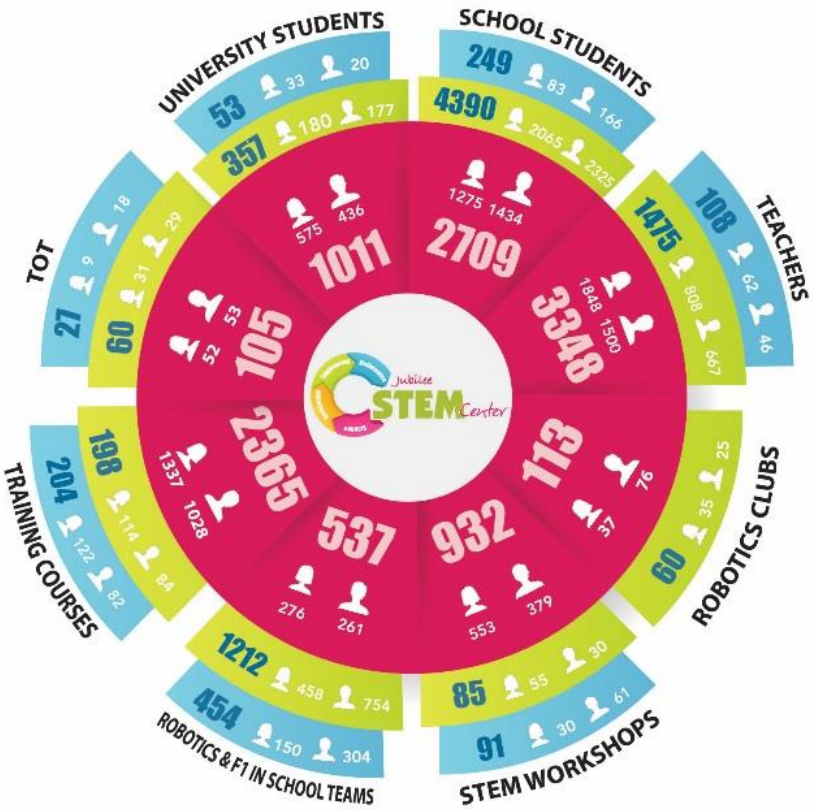
STEM Program
2015 - 2018

Public Sector Beneficiaries

Private Sector Beneficiaries

Regional Institutions Beneficiaries



Total Beneficiaries	Public Sector	Private Sector	Regional Institutions
20,143	11,120	7,837	1,186
51% 49%	54% 46%	48% 52%	41% 59%

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STEM Program in Public Schools

STEM Activities

School Students
57%
43%

University Students
61%
39%

Teachers
56%
44%

Locations
44

3 STEM Labs

Girls Schools
70%

Boys Schools
30%

Total Beneficiaries
2015-2017

6,016

55% 45%

6% People with Disabilities

STEM Training

624 Teachers & Trainers

3,220 hrs

STEM Teachers

297 57%

222 43%

36hrs

STEM Trainers

52 49%

53 51%

32hrs

9 STEM Curricula

Introduction to STEM GEMS Robotics Electronics Math & Chess Coding Mobile App Robot C Arduino

5 STEM Braille Curricula

MATH & CHESS 62% 247 38% 150

ELECTRONIC 59% 236 41% 156

GEMS 60% 269 40% 179

CODING 54% 170 46% 145

INTRODUCTION TO STEM 61% 336 39% 215

ROBOTICS 60% 315 40% 213

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