



Ref. No. IKGPTU/AR/SW/2206

Dated: 19/3/19


ਪ੍ਰਿੰਸੀਪਲ/ ਡਾਇਰੈਕਟਰ
ਆਈ.ਕੇ.ਜੀ.ਪੀ.ਟੀ.ਯੂ ਨਾਲ ਸਬੰਧਤ ਸਾਰੇ ਕਾਲਜ ਅਤੇ Campuses

ਵਿਸ਼ਾ:- Environment Studies Course ਲਈ Class ਤੋਂ ਬਾਹਰ ਵਿਦਿਅਕ ਟੂਰ ਦੁਆਰਾ ਸਿਖਿਆ ਦਾ
ਲਾਭ ਲੈਣ ਸੰਬੰਧੀ ।

ਸ਼੍ਰੀਮਾਨ/ਸ਼੍ਰੀਮਤੀ ਜੀ,

ਉਪਰੋਕਤ ਸਬੰਧੀ ਪ੍ਰਾਪਤ ਹਵਾਲਾ ਪੱਤਰ ਨੰ. PGSC/MOH/179 ਮਿਤੀ 05/03/2019
ਅਨੁਸਾਰ ਆਈ.ਕੇ.ਜੀ.ਪੀ.ਟੀ.ਯੂ ਅਤੇ ਯੂਨੀਵਰਸਿਟੀ ਨਾਲ ਸਬੰਧਤ ਸਾਰੇ ਕਾਲਜਾਂ ਨੂੰ Environment Studies
Course ਲਈ Class ਤੋਂ ਬਾਹਰ ਵਿਦਿਅਕ ਟੂਰ ਦੁਆਰਾ ਸਿਖਿਆ ਦਾ ਲਾਭ ਲੈਣ ਲਈ ਲਿਖਿਆ ਗਿਆ
ਹੈ(ਪੱਤਰ ਦੀ ਕਾਪੀ ਨਾਲ ਨੱਥੀ ਹੈ)।
ਉਪਰੋਕਤ ਅਨੁਸਾਰ ਇਹ ਵਿਦਿਅਕ ਟੂਰ ਭੇਜਣਾ ਯਕੀਨੀ ਬਣਾਇਆ ਜਾਵੇ ਜੀ, ਤਾਂ ਜੋ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ
Environment Studies Course ਦੀ ਵੱਧ ਤੋਂ ਵੱਧ ਜਾਣਕਾਰੀ ਦਿੱਤੀ ਜਾ ਸਕੇ।

ਆਪ ਜੀ ਦੀ ਜਾਣਕਾਰੀ ਅਤੇ ਅਗਲੇਰੀ ਕਾਰਵਾਈ ਹਿੱਤ।


ਪਰਮਜੀਤ ਸਿੰਘ ਗਿੱਲ
ਸਹਾਇਕ ਰਜਿਸਟਰਾਰ
(ਵਿਦਿਆਰਥੀ ਭਲਾਈ ਵਿਭਾਗ)

ਉਤਾਰਾ:

1. ਸੰਯੁਕਤ ਰਜਿਸਟਰਾਰ, ਵਿਦਿਆਰਥੀ ਭਲਾਈ ਵਿਭਾਗ:- ਜਾਣਕਾਰੀ ਹਿੱਤ।
2. ਕੰਟਰੋਲਰ ਪ੍ਰੀਖਿਆਵਾਂ:- ਕਾਲਜ ਪ੍ਰਿੰਸੀਪਲ ਦੇ ਲਾਗਇਨ ਤੇ ਪਾਉਣ ਹਿੱਤ।
3. ਡਿਪਟੀ ਕੰਟਰੋਲਰ ਆਈ.ਟੀ.ਐਸ. ਵਿਭਾਗ :- ਵੈਬਸਾਈਟ ਤੇ ਪਾਉਣ ਹਿੱਤ।



Manjeet S/D
14/3/19
**PUSHPA GUJRAL
SCIENCE CITY**
(A JOINT PROJECT OF GOVT. OF INDIA & PUNJAB GOVT.)

Dr Neelima Jerath
Director General

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Ref. No. PGSC/ *MOH/179*

Date : *05.03.2019*

Dear *Prof. Sharma*



A compulsory Environment Studies Course (EVS 102-18) has been introduced by IKG Punjab Technical University (PTU) for all undergraduate students as per directions of the Hon'ble Supreme Court of India and UGC. The course comprises 6 Units (Introduction to Ecosystems, Natural Resources and Energy, Biodiversity and its conservation, Environment Pollution including Climate Change and Disasters and Field Work).

The detailed course content has been brought to my notice. It is observed that Pushpa Gujral Science City (PGSC) offers several learning facilities in tune with the above course curriculum, like, Climate Change Theatre, Renewable Energy Park, information on Evolution, Eco Systems and Biodiversity (especially Wetland Eco system and Bird Gallery, as well as, 168 Plants species from 144 genera), Earthquake Simulator, Rain Water Harvesting Unit and Bio-toilets (to promote water conservation), etc.

In addition to the above, Engineering students could also benefit from exhibits on mechanics, optics, sound, etc. in Fun Science Gallery, electronics and computer science in Virtual Reality Gallery, application of mechanical engineering in Hydraulic and Pneumatic Simulators, architectural studies in variously shaped buildings, satellites and aeronautics in Science Voyage Hall, etc.

It would be useful if students from institutions affiliated to PTU could avail the benefit of this facility for out-of-class learning. May I, therefore, request you to kindly include visit to PGSC under Unit 6 of Environment Studies course as part of field work.

I look forward to hearing from you.

With *sincere regards*

JR (SW) & Director (M/C)

Office of the Vice-Chancellor
No. *834* Dated *12/3/19*
Dean
COE
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DR

Registrar
Jt. Reg.
Director
DC

Yours sincerely,

Neelima Jerath
(Dr. Neelima Jerath)

Prof. Ajay Sharma,
Vice Chancellor,
IKG Punjab Technical University,
Kapurthala

AR (SW) Rashed
12/3/19

**Proposal for
Mandatory Field visit of Technical and Vocational students in Colleges /
Universities of Punjab to Pushpa Gujral Science City**

1. Background

Pushpa Gujral Science City (PGSC) is a joint venture of Ministry of Culture, Govt. of India and Department of Science, Technology & Environment, Govt. of Punjab. Set up with the objective to supplement formal science education and promote science communication and innovative thinking among the masses, especially youth, it was opened to the public in 2005. Till date 43 lac visitors have visited the facility, arriving with curiosity and leaving inspired by its creative and innovative content. Being one of the three major Science Cities in the Country, it is a unique facility in Northern India which offers edutainment to all sections of society, across all age groups.

Its various facilities include Galleries on Evolution, a 5 acre Dinosaur park (with Robotic Dinosaurs), Renewable Energy Park, Climate Change Theatre, Earthquake Simulator and Flight Simulator, Amazing Living Machine, Gallery on Health, Biotechnology & HIV, Outer Space Gallery, Virtual Reality & Cyber Space Gallery and Galleries on Fun Science, Railways, Defence, etc., as well as, Planetarium, Large Format Film Theatre (I-Max), 3D and Laser Shows, Herbal & Cactus Garden, etc. These offer information on cross cutting and inter-curricular issues and help to explain scientific concepts and their relevance to society. An Innovation Hub at Science City motivates students for 'out-of-box' thinking, which could contribute towards societal development. More information about these facilities is available at website www.pgsciencecity.org.

2. Proposal for Consideration

- i) Since PGSC provides information on several areas which cuts across curriculum of various subjects in higher and professional education, it is proposed that **visit to PGSC be made mandatory for all Technical and Vocational Education students.**
- ii) The syllabus prescribed by AICTE has also been referred to in this regard. Environmental Studies has been introduced as a mandatory course for all programs in Diploma Courses. This includes Field work equal to 5 lectures (under Unit 8 of the curriculum). A visit to Pushpa Gujral Science City will fulfill the requirement of this course and provide Diploma students comprehensive understanding of various aspects of environment. **It is, therefore, proposed that Diploma students be given internal assessment marks for "Environment Studies" based on field visit to PGSC.**

3. Curriculum related information at PGSC

Major curriculum related information provided at PGSC includes:

A) Environment Studies:

- i) **Climate Change Object Theatre:** A unique theatre to promote sustainable development, the theatre sensitizes the masses on Climate Change and global warming issues and encourages them to take steps – even if small ones – to be environmentally responsible. This 18 meter diameter theatre with seating capacity of 125 persons has been set up in a dome shaped building with an investment of Rs.150 Lacs. The theatre takes visitors around the globe through a film, to explore the implications of a warming planet, specifically from the Indian perspective, and provides opportunity to understand and appreciate the latest climate issues and

the human role in mitigating and adapting to climate change. This show also educates visitors on renewable energy and Sustainable Development issues via multi-screen projections.

- ii) **Renewable Energy Education (REEP):** The park is set up in 3.25 acre area with the assistance of the Ministry of Non-Conventional Energy Sources (MNES) and Punjab Energy Development Agency (PEDA) to create awareness among the masses on use of various renewable energy sources (Solar, Wind, Hydel, Tide, Wave, Geo Thermal etc), information on new technologies developed in the area of renewable energy and to educate the masses on energy conservation measures. Students can also see live example of Solar Energy use (as PGSC meets its partial energy demand through SPV).
- iii) **Ecology & Evolution of Earth and Life on it:** "Life through the Ages Panorama" where students can trace the origin of Earth (Big Bang) and life and their evolution and explore progression of human species, is set up in 80-feet diameter dome structure through 2D and 3D models, huge background paintings (along with landscaping), providing a wide-angle view of the entire occurrence. It helps one embark on a million years journey, from the first hominines to the last surviving human species i.e. *Homo sapiens*. Some original fossils are also placed at Science City.
- iv) **Dinosaur Park:** The Panorama is associated with a 5 acre open Dinosaur Park with more than 44 life size dinosaurs and several robotic dinosaurs on the island at the Science City. The students walk through Cretaceous, Jurassic and Triassic eras when Dinosaurs ruled the Earth.
- v) **Bio-Diversity and Conservation of Eco Systems:** Punjab is especially rich in Avian bio-diversity. A gallery on Bird biodiversity showcasing wetland and terrestrial ecosystems along with various birds of each State of India has been set up. It provides information on avian wealth of the country and conservation issues.

Further, PGSC harbours rich floral biodiversity with Cactus Garden, herbal garden and avenue of rare, endangered and threatened species. In all, there are more than 168 plant species covering 144 general and 58 families of plants. Cactus garden has been developed in an area of approximately 4.25 acres. A herbal garden has also been set up with a collection of medicinal and aromatic plants. Besides, Science City has beautiful collection of trees of Punjab having rich cultural and heritage value and Ashok vatika.
- vi) The **Earthquake Simulator** provides life like experiences of an earthquake on different Richter scales and prepares students for disaster management, a component of Environment Studies curriculum.
- vii) The students can see working of **Rain Water Harvesting System, STP and Bio-toilets** and understand Sustainable Development issues.

The above mentioned facilities available at Science City, thus, make it an ideal place for conducting environmental education activities. The visit will enhance the understanding of students about the relationship between human beings and the environment and develop capabilities/skills to protect the environment and promote sustainable development.

B) Additional Information for Engineering, Vocational and Physical Science students

- i) PGSC has gallery in Fun Science to explain concepts of mechanics, optics, sound etc.
- ii) Application of mechanical engineering aspects can be studied through hydraulic & pneumatic based simulator
- iii) The Space Gallery in Science Voyage Hall offers information of Space Science, Science of Flight, Satellites, Earth technology, Aeronautics etc.
- iv) Virtual Reality and Cyber Space Gallery is based on application of electronics and basics of Computer Science
- v) Architecture – Similarly Buildings in PGSC are differently shaped (like dome, pyramid, etc.) and are a subject matter for Architecture students.
- vi) The Defence Gallery provides information on science behind missiles, tanks, aircrafts and warfare.
- vii) The Railway Gallery provides information on science behind rail transport.
- viii) The Digital Planetarium provides information on Astronomy and the movement of the stars and planets.
- ix) The Large Format Film Theatre provides an immersing experience of nature, endeavours of man in various areas of scientific research and technological development, etc. (based on the theme of the ongoing I-MAX film).
- x) Science of Sports Gallery provides information on science and humans physiology behind several popular sports.
- xi) The HIV AIDS Gallery provides information on HIV, drugs and de-addiction

C) Promoting Innovative Thinking:

i) Innovation Hub:

An Innovation Hub has been set up in PGSC with the following facilities:

- Basic skill learning and exploration centre titled 'Tod-Phod-Jod'
- Laboratories on Physics (including Robotics), Chemistry, Biology, etc. with facilities like 3-D Printer

The Innovation Hub conducts the following programs:

- Student membership and activity based programs
- Idea Bank
- Mentorship to students for development of ideas into products / processes
- Higher Education students can also avail this facility for
 - Development of models
 - Idea development

D) PGSC regularly organizes:

- Trainings (including for teachers)
- Workshops, Seminars
- Special subject camps like Robotics, Microbiology, Rocketry, etc.
- Special shows

Need based programs can also be organized on demand.

Mechanism of Implementation

The Educational Institutions could adopt any of the following mechanisms:

- i) Ask students to undertake the field visit (in groups or individually) for which they will be issued a certificate by PGSC (subject to production of student ID at the time of ticket purchase) which can be submitted along with course work to the respective Institutions.
- ii) Include ticket cost in total 1st year fee and arrange for group travel which will entitle them to group discount (10%, subject to >500 students). PGSC will issue a group certificate to the institutions.