



College Code:7Q

**BRILLIANT GRAMMAR SCHOOL EDUCATIONAL SOCIETY'S  
GROUP OF INSTITUTIONS - INTEGRATED CAMPUS**

(Approved by A.I.C.T.E., & P.C.I., New Delhi, Affiliated to JNTUH, Hyderabad)  
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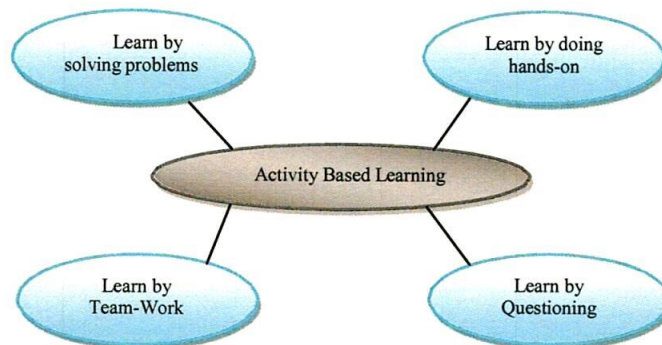
## 7.2 Best Practices

7.2.1 Describe two Best Practices successfully implemented by the institution as per NAAC format provided in the manual.

### Best Practice-I

#### 1. Title of the practice: Activity-Based-Learning (ABL) :

Activity-Based-Learning is an approach where the learner plays an active role in his/her learning through participation, experimentation and exploration. It is becoming an urge for modern days learner centric, OBE system.



#### 2. Objectives:

To enhance the learning skill of the students and to impart a deeper understanding of the course. To make the students to understand the course content through application oriented projects. ABL encourages the students in teamwork where communication, collaboration and interaction skill play as an important role. It explore real time applications and challenges to understand the latest technologies that are practiced in the industries /field that is related to the course. To impart skill to address the real time problems by adopting a systematic approach and to derive a realistic solution.

#### 3. The Context :

Activity-Based-Learning leads to “Self Learning” system instead of “Educator Teaching” system. Through Activity-Based-Learning, students will improve their attitudes towards learning and exhibit their individual talents. They understand theoretical information through practical

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work and develop their critical thinking on problem solving skills. ABL learning leads to the development of lab scale models by students as a part to explain the current scenario of their project or they can also develop models to forecast a suitable solution to that is relevant to their project. Activity based learning provides an opportunity for the students to visit various fields/industries pertaining to their project and also to interact with the experts in the field of interest. Learning through activity is a type of learning where students learn their ideas through various activities such as PPT's, debates, seminars, model presentations, project expose, field visits, Alumni Interaction, Group discussions and role plays.

#### 4. The Practice :

Responsibilities of the students are assigned as per the interest, voluntary attitude of the students in conducting various activities and organizing the programs within the campus successfully which improves their strength and confidence in conducting the events. The ABL exercise is analyzed using data on the participation of students in various activities and practices and the gradual improvement in their performance. There is a common trend that can be observed about skilled students who are self motivated and confident, when they participate in intercollegiate competitions.

#### 5. Strategies for ABL:

**Group Discussion:** Team work and knowledge sharing increase communication amongst team members. Task given to the students must require varying knowledge so that students are bound to communicate amongst themselves. After sharing of knowledge they can conclude and take decision from their team. They also need to communicate with faculty to solve critical problems.

**Model presentation:** Increase the ability to solve real life problems by analyzing and solving using subject knowledge, based on course topics.

**E-Learning:** Institute permit to access text books and references, project reports, magazines, course materials and e-journals.

**Seminars:** Tasks given to the students must be subjective so that they can put their views in different ways after analyzing. So that they can be engaged in doing activities in classroom.

**PPT's:** Power Point Presentation as a presentations that students generally uses in corporate meetings for educational purposes such as training, induction etc.,

**Quiz:** It helps students to be more competitive in nature and answer quickly.

**Debating:** It increases the power of establishing the self argument in front of others.

**Alumni interaction:** The Alumni give support to the students for building strong bond between alumni and present students. It serve as a forum through which alumni may support and advance the pursuit of academic excellence at the Institution.

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**Field/Industrial visits:** It provides combining knowledge of theoretical fundamental principles with skills and judgment acquired from practical experiences.

**Role play:** Role play explores the effectiveness of the approach in raising students awareness of the social dimension in the engineering profession.

**Laboratory sessions:** Laboratory session are conducted for better understanding of theoretical concepts.

**Startups:** Students are encouraged to participate in entrepreneurship programs which develop the innovative skills among the students.

**6.Evidence of success:**

The quantitative indicators for learners who actively participate in co-curricular activities are that they show improvement in academic performance. Students who have passed out have done extremely well in the corporate world. Some students have put their learning into application by starting their own businesses. Evidence of success of the practice includes university ranks, better results in the examinations, improved attendance, less drop outs, increased participation in co-curricular and extracurricular activities, better discipline on campus and respectful relationship between teachers and students. The students are more relaxed and have a healthy relationship with the staffs.ABL benefits on their intellect to become sharp and the capability of problem-solving increases and it supports their language capability and literacy development.

**7. Problems Encountered and Resources required:**

University should allocate budget to support financially for procuring components for the projects. Time management by students is one of the problems encountered by the students.ABL enrichment the competent skills of the students and there was an overall improvement in the performance of the students in their campus placements.

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## Best Practice-II

### Title of the practice: Research and Development

Anti Drone System from Unistring Tech. solutions Pvt. Ltd works on drone detection, Classification and tracking on passive surveillance, camera sensors and neutralization of the threat through jamming the Drone communication. The System is a multi-layer, multi-sensor Architecture aimed at providing comprehensive security against drone attacks.

#### Objectives Modules of Multi sensor setup include:

- RF Based Drone detector (RFDD)
- Video based Drone Identification & Tracking (VDIT)
- RADAR
- Data fusion and Command Center (DFCC)
- Drone RF Jammer (DRFJ)
- Hard kill

#### The context:

RF Based Drone detector (RFDD):RFDD detects the drone using Radio Frequency (RF) communication between drone and Ground control center (GCC). This System is on continuous search mode on wide band of frequencies that are typically used by Drone and its GCC. Whenever a frequency of interest is identified, the system locks and monitors the signal. Based on the identified signal, system estimates the direction of Drone and its GCC. An array of receive antenna is used for estimation of direction of signal.

Video based Drone Identification & Tracking (VDIT): This system receives commands for position from RFDD. Once positioned in the direction of interest, captures video and images of drone. VDIT is capable of capturing and tracking video up to a range of 3 Km

RADAR: Detection of autonomous drones (flying without a link between drone and operator) using RFDD is not possible. RADAR forms the best choice to detect such threats. RADAR provides both Azimuth and elevation data of the drone.

Data fusion and Command Center (DFCC):Data from RFDD, VDIT and RADAR is integrated at the command center. Detection and classification algorithms based on RF data as well as visual data are built into this system. A list of detected signals and Parameters such as Frequency and type of drone etc are displayed.

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Drone RF Jammer (DRFJ): Drone RF Jammer (DRFJ) is capable to disable the link between GCC and Drone, by jamming simultaneously ISM bands, GNSS signals, mobile signal and any other intercepted frequencies. The frequencies detected by RFDD are automatically taken and jamming waveforms are generated and radiated using the directional antennas.

Hard kill: UTS is offered with hard kill options. Kinetics based kill and a Net based drone catcher are the two options available in hard kill. Kinetic based neutralization is supplied with a gun which can auto align to the target and fire bullets against the target to destroy the same physically. In order to capture the drone and land it at a safe place, net-based drone capture option can be employed. For this option, a dedicated drone with a hanging net will be launched to capture the rogue drone. This option is suitable for small rogue drones carrying potentially damaging explosives.

### The Practice:

Video feeds are given to software module and video processing algorithms in the software automatically confirm the presence of drone and imitate tracking. The day and night camera sensors are mounted on an automatic servo-based positioning system. The feed from the RADAR is integrated to the data fusion center for effective remote monitoring of the threats Spectrum and waterfall screens are also part of the software, which provide the complete picture of the detected emissions.



R&D of UTS interacting with BRIG Students.

  
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**Evidence of success:**

The students regularly participate in R & D activities organized by UTS. About 60 members attended the internship programs. Around 12 members were selected in the placements conducted by the UTS. UTS also organizes the workshops and guest lectures by the experts.

**Problems Encountered and Resources required:**

Time management by students is one of the problems encountered by the students. As there is a lack of space availability, they can't accommodate more students to involve in the R & D activities.

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