

## AERONAUTICAL BASED 2018 – 19



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Here is the list of project titles 2018 and 2019.



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Projects are available for all branches of **ENGINEERING, DIPLOMA, MCA/BCA, and MSc/BSc.**

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Here we provide **MECHANICAL ENGINEERING 2018 project lists** with abstracts. we do train a student from basic level of mechanical engineering which bases the project that includes live project development class and also detailed information by our S.M.E ( Subject matter experts ) , projects implementation, final project demo . Wide variety of **AERONAUTICAL** based projects, both real time and prototype is been developed.

If you have questions regarding these projects feel free to contact us. You may also ask for abstract of a project idea that you have or want to work on.

The **own projects idea** for diploma and Engineering students can also encouraged here.

## **AERONAUTICAL BASED PROJECTS 2018-19**

### **TOPIC - DEVELOPMENT OF JET ENGINE ( TAE 01 )**

This project deals with researching, designing and building jet-engines. A simple turbojet engine was designed and construction was begun. The design was made by studying the work done by industry and researchers over the course of the history of jet engines. The methods were then discussed and chosen in a way that would simplify the design work as well as the construction of the engine. The goal was to create a self-sustaining combustion within the engine. The design settled upon consists of a radial compressor, an annular combustion chamber and an axial turbine. Since the compressor would have been the most difficult part to machine the decision was made early on to use the compressor from a turbocharger out of an automotive engine. Upon further study it was discovered that the characteristics of this compressor was not compatible with the rest of the design, as the compressor was made for an RPM range outside of what we could achieve and the compression ratio was too low. Most of the rest of the engine had already been built, and there was not enough time to design and build another compressor so work was aborted on the engine.

## **TOPIC - DEVELOPMENT OF BIRD DETECTION AND DEFLECTION SYSTEM IN AIRCRAFT ( TAE 02 )**

Birds cause a lot of trouble in airports especially during take-off and landing of aircrafts. Incidence of the bird hitting the aircraft is called bird strike. A small bird, if gets struck inside the engine can cause serious consequences like losing the entire aircraft, passengers and its crew. It can sometimes damage the aircraft to major extent as shown in the figure below. Hence it is very important to detect any presence of birds within the range specified. If birds are detected, they have to be deflected so that they will not come into the path of the aircraft. One can use water jet as a deflector system since it is a harmless way to deflect the birds.

The detection system will scan the range specified and will send a signal if any object is present within the region. Upon detection, the detector system will raise an alarm in the form of a signal. Once the signal is raised from the detector system, the location estimation system will estimate the position of the object relative to the aircraft. This is done so that the water jet can be turned on to reach the location of the object to deflect it away.

## **TOPIC - RF BASED AIRCRAFT BLACK BOX ( TAE 03 )**

Now a day's black box is available in aircraft for storing the all activity of the air craft. Here we design the black box which will detect the fault and automatically inform to control room through RF TX. We use RF TX and RF RX for communication.

It has the following feature:

- 1 Automatically senses the engine vibration; an announcement is displayed in the base station in case of any sort of vibration in engine.
- 2 To avoid the collision.
- 3 Automatically senses the engine temperature, an announcement is displayed in the base station in case of abandon rise in engine temperature.

## **TOPIC - PNEUMATIC OVERWING EXIT SYSTEM ( TAE 04 )**

We are fabricating a pneumatic operated emergency overwing exit system in aircrafts, which uses pneumatic cylinder to slide down the roller when the magnetic switch used in doors repels each other. The magnetic switches are connected to a microcontroller which in turn activated the relay. Once the relay is activated the solenoid valve connected to the relay will allow the air from compressor to pass through the pneumatic cylinder and the roller will slide down immediately for the passengers to exit the aircraft at emergency situations.

### **HEAD OFFICE**

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