

## **Embedded Systems – Training and Internship Program**

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### ***Introduction:***

An internship is job training for white-collar and professional careers. Interns may be college or university students, high school students, or post-graduate adults. (Wikipedia)

Generally, an internship consists of an exchange of services for experience between the student and an organization. Students can also use an internship to determine if they have an interest in a particular career, create a network of contacts or gain school credit. Interns can be a significant benefit to the employer as experienced interns often need little or no training when they begin regular employment.

The two primary types of internships are:

Work experience internship:

Most often this will be in the second or third year of the college period. During this period, the student is expected to use the things he/she has learned during graduation studies and put them into practice. This way the student gains work experience in their field of study. The gained experience will be helpful to finish the final year of graduation.

Research internship (graduation) or dissertation internship:

This is mostly done by students who are in their final year. With this kind of internship a student does research for a particular company. The company can have something that they feel like they need to improve, or the student can choose a topic within the company themselves. The results of the research study will be put in a report and often will have to be presented.

A six-month internship is now mandatory for students pursuing technical and engineering courses at the Visvesvaraya Technological University. The VTU introduced this program to enable students to get hands-on experience in the industry so as to add value to their post-graduate studies. Interestingly, the terms for internship laid down by the VTU for post-graduate courses combines the best of above two types.

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R Shivakumar, member of the VTU executive council, said, “Producing thousands of graduates without giving them hands-on experience will not complete the goal of the university.” Shivakumar, a former president of the Federation of Karnataka Chambers of Commerce and Industry, said students who do well during the internship have better chances of finding placements. (Indian Express: 06th August 2014)

In order to help the students meet the above academic requirements, Hamsa Innovations, Bangalore is launching a training and internship program compliant with the rules and regulations of the VTU. It is designed to meet the requirements as specified by the VTU for various departments of post-graduate courses.

We appeal you to join this program and benefit immensely to improve your career prospects.

### ***Objectives:***

The following are the objectives of the program:

1. To introduce the student to latest technologies under Electronics and Telecom domain
2. To understand the current trends in the industry
3. To build a skill set that matches the current requirements of the industry
4. To learn core subjects with hands-on, practical and industry oriented learning methodology
5. To improve the quality of your resume and career prospects
6. To fulfill the academic requirements as prescribed by the VTU
7. To lay a strong foundation for the final semester project for post-graduate students

### ***Who should attend?***

This program is customized for students pursuing masters program in Electronics, Telecom and related branches under the VTU. However the program can be availed by anyone interested to improvise their career prospects as this program is tailor made for fresh graduates and budding engineers.

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### ***Policy, terms and conditions:***

#### *Working method:*

**Workshops:** These are training programs that help an individual to build skills that match current industry standards. These are essentially classroom sessions and individuals are expected to complete these workshops to earn the credits required to complete the internship program.

**Consultation sessions:** These are periodic review sessions held with the in-charge manager for a project to review the progress and plan the next course of action.

**Assignments:** In order to save time, energy and infrastructure charges, individuals are expected to carry out assignments at home at their convenience and submit them in the prescribed way.

**Group discussions:** Periodic group discussions are held to enable sharing of knowledge and improve communication skills.

**Seminars and presentations:** If there is a worthy outcome from research work, participants are allowed to present their work in international and national level conferences.

#### *Credit points:*

To help track the performance of individuals and to make sure of their participation, we have a unique system of grading them using credit points. On completion of every activity an individual will be given credit points enough of which should be accumulated to earn the internship certificate.

#### *Hardware:*

Hardware should be strictly used according to the hardware usage policy of Hamsa Innovations. We strongly feel that a continuous practice is necessary to build a great skill set, thus we are offering a free hardware board (ARM Cortex M3 or Xilinx Spartan FPGA included in the package) for exploring and doing experiments at home.

#### *Software:*

Software will be provided by Hamsa Innovations or you will be asked to download if they are in open-source domain.

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### *Consultation:*

One to one consultation is on the basis of taking prior appointment with your in-charge manager. Regular workshops will be conducted at our premises or other venues and you will have to attend them to earn credit points for completion of the internship. With the package 10 consultations can be availed. Further consultations are charged.

### *Certificate:*

Certificate will be issued at the end of the program. It will be given only on accumulating the prescribed credits.

### *Reports:*

Reports have to be generated regularly by individuals and for this we suggest every participant to maintain a diary until the end of the program.

### *Duration:*

The duration of the programs spans from 4 months to 6 months depending upon individual performance.

### ***Start date:***

April 6<sup>th</sup>, 2015

### ***Duration:***

6 Months

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### **Cost:**

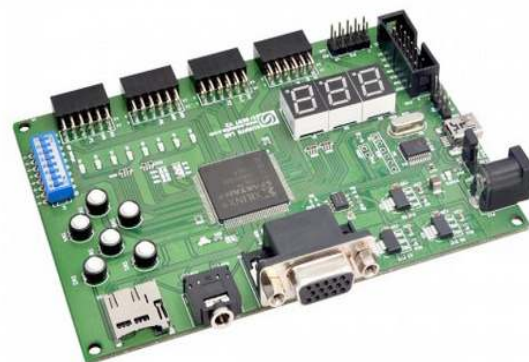
Rs. 30000/-

### **Package:**

1. Workshops on the following topics:
  - a. Advanced C
  - b. Perl programming
  - c. MATLAB
  - d. Verilog
  - e. FPGA
  - f. ARM microcontrollers
  - g. Project and time management
  - h. Interview skills
  - i. Resume building and career guidance
  - j. Pre-project consultation for final semester
2. Case studies and mini projects
3. Project review classes and review of report (10 consultations)
4. Internship certificate on completion of the program
5. ARM Cortex M3 board or Xilinx FPGA board



OR



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### ***Vacancies:***

25

### ***Topics:***

We have internship work to be done under the following domains:

1. Embedded Linux
2. Real time operating systems
3. Board bring-up, writing board support packages, boot loaders and libraries
4. IP development
5. Verification using Systemverilog
6. Single and Dual core Embedded Systems on FPGA
7. Networking, Telecom and Wireless Communication
8. Cloud and Internet-of-Things
9. Network Security
10. Automotive electronics
11. SoC development on FPGA and Partial Reconfiguration, High-level synthesis
12. Signal processing and communication systems design on FPGA with MATLAB

The objectives of these projects will be clarified in the introductory session. At least two projects are available under each domain.