Information Technology

NEWS LETTER

Ignited Trendz

VISHNU
UNIVERSAL LEARNING

VISHNU INSTITUTE OF TECHNOLOGY
BHIMAVARAM

Vishnu Institute of Technology, the scion of Shri Vishnu Educational Society was established in 2008 and is currently the eleventh educational institution to disseminate education under the aegis of this society. Nascent that it is, it combines in its matrix the lofty idealism of its Founder Chairman the Late Padmabhushan Dr. B. V. Raju, a distinguished industrialist, philanthropist and an eminent educationalist; the experience and vigour provided by the Chairman Sri K.V. Vishnu Raju, a man of holistic vision and his team comprising dexterous administrators, reputed academicians and brilliant line of students. They constantly strive to make the institution join the ranks of prestigious technical institutions.

Campus

The Campus, sprawling over 100 acres, is located in the verdant atmosphere of Vishnupur in Bhimavaram. It is in the very vicinity of the town and is well connected by road. VISHNU also provides hostel facilities to the students who opt for a residential mode of education. The hostels are constantly updated and provide an atmosphere conducive to pursue education.

Hands on Experience

To make the instruction in VISHNU more practical-oriented, special focus is on hands on experience. The Assistive Technologies Lab run in collaboration with the University of U Mass, USA helps students to combine technology with a humanistic outlook. Gadgets for the physically challenged are designed and developed here by the students under the guidance of eminent professors both from the Institute and abroad. VISHNU aims at empowering students with technical skills and can-do entrepreneurial spirit. The IBM Software Centre of Excellence in the campus provides the students with the best of quality technical education there by increasing the skill set of each student and faculty for a great career.

Department of Information Technology

The mission of the department is to advance and enhance computer science engineering fundamentals to build the intellectual capital of students. The IT Department endeavours to be an important resource centre for the development of computing systems and applications.

The department was established in the academic year 2008-09 with an annual intake of 66. It offers 4 year B.Tech. This program affiliated to JNTU Kakinada & approved by AICTE. The department has number of well equipped Laboratories and provides excellent facilities for learning.

CONTENTS

HELM OF AFFAIRS

Academics are a continuing process of exploration, growth and sustenance. Today information explosion has brought about many changes. New ideas are generated, new interpretations are given and new applications are invented. The equations are changing very fast both in education and at the work place. Every day brings in new demands. One has to constantly upgrade to cope with the fast emerging trends. A software professional once said "We are training people in technologies to find solutions for problems that have not yet been identified". Moreover the roles and responsibilities of professionals are ever expanding making it imperative to move beyond the confines of the classroom and the stipulated curriculum and focus on the skills needed to cater to the needs of the society. Hence it has become imperative to all the stakeholders in education to arm themselves with the necessary knowledge, skills and attitude to keep themselves abreast of the rapid changes.

That explains everything—the Chairman's message to the faculty to constantly update themselves with the emerging new technologies and concepts, the focus on research, paper presentations and publications, undertaking new projects, adopting new technologies for information collection and dissemination as well.

"The key to growth is the introduction of higher dimensions of consciousness into our awareness" -- Lao Tzu.

That is what the message of our Chairman does, to motivate us to action.

The stimulus has been given…

it's time for response.

Chairman Message

I am happy to inform that the department of Information Technology of Vishnu Institute Of Technology is publishing their department news letter for the academic year 2012-2013. I Commend and appreciate the efforts taken by the staffs and students to enhance the quality of academics in the college. Vishnu Institute Of Technology moreover has the credentials and Proven strengths to initiate such an indispensable academic activity.

Message from Principal

It is my pleasure in congratulating the department of IT on the pleasant occasion of releasing the newsletter for the period 2012-2013. It is great to find a considerable number of winners and participants in co curricular and extracurricular activities which certainly prove that our staff and students are adequately equipped and possess necessary skill-sets to bring such laurels to the institution. I am sure that publishing a newsletter of this sort containing the achievements of the wards will be recognition to them and I wish them all the very best for future endeavours.

Message from HOD

Welcome and best wishes for all the Staffs and Students of the department who receive this News Letter. It has been interesting and busy year for the members of the department. And has had a number of Successful events including Guest Lecture, Workshop, National Level Conference and Symposium. I invite all the readers of this news letter to share this with your friends and contribute more items for 2014 News Letter.

Progressive Strides

While the academic year came to an end in April for II, III and Final Btech students, for I B Tech it is intra semester break after the I

Inspection

The JNTU fact finding Committee visited our campus on 8 April.

Ratifications

Staff Ratifications were done at JNTU K from 27 to 30 April 2013.

Foreign Languages

German A1 level training was imparted to the students of I B tech from 20 to 30 May 2013. The training was provided by Language Labs Chennai.

Department Activities

Mission R & D Preliminary exam for 3rd B.Tech students of IT Selected 11 Members on 28-06-2013.

A workshop on JDBC is organized to III B.Tech IT students on 12-03-13 by TalentSprint team

or, North Eastern University, Massachusetts, USA on 12-11-13.

Seminar on IBM-TGMC projects is organized on to III & IV IT students (by Mallikarjun from Global Talent Track Pvt Ltd) on 15-03-13

Dr. Y S S R Murthy gave guest lecture on "Software Engineering" to II B.Tech IT students

Workshop on python between 11-02-13 to 13-02-13 to III B.Tech students.

Workshop on JDBC was organized to III B.Tech IT students on 12-03-13 by TalentSprint team.

Workshop on IBM Technologies was organized to III & IV IT students by Mallikarjun from Global Talent Track Pvt Ltd on 15-03-13.

Faculty Activities

Mr. M.Sandeep Kumar attended workshop on "Cryptography and Network Security" at BVRIT, Narsapur between 27-05-13 to 01-06-13.

Placement Activities

Several students were recruited in the placement drives in our college

Regd.No.	Student Name	Company
09PA1A1252	THOTA HARIKA	NTTDATA
09PA1A1250	TALUPURI DEVI	NETENRICH
09PA1A1242	PENMETSA	NAVIGON

	RAHUL VARMA	
09PA1A1202	BADARLA KARUNA	AMAZON
09PA1A1228	KOTTAPALLI PRATYUSHA	TECHMAHINDRA

Student Activities

4 of II B.Tech IT students participated in various workshops at SRKR engineering college, Bhimavaram as part of TECHFLEET-2013 between 19-03-13 and 20-03-13.

III B.Tech IT students went to Educational tour (south india) between 01-03-13 to 08-03-13

Mr.N Krishna Pradeep of II B.Tech IT gave presentation Miraculous Blue-Fi Technology won 2nd prize in Paper Presentation on 19-02-13.

10 students participated in Assistive Technology Lab (ATL) in the month of July.

Articles

Nanotechnology

N.B.Naga Mallikarjuna

IV-BTECH- II Semester

Introduction

1.Cancer: disease, detection, and treatment

Cancer: the disease

Estimates in 2007 state that one in six men in the United States will be diagnosed with prostate cancer in his lifetime. It is estimated that there will be over 218,000 new cases and over 27,000 deaths related to prostate cancer this year. It is also the second most common cancer and second leading cause of cancer death for men in the US [1, 2]. Prostate cancer affects the prostate gland, located below the bladder and around the urethra in men. Figure 1.1 depicts the surrounding human anatomy.

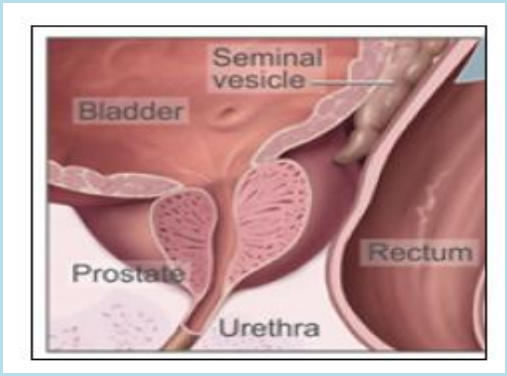

Figure 1.1. Male lower abdominal anatomy.

Prostate cells can begin to mutate and can metastasize into surrounding tissue, such as bone. It is not clear what causes prostate cancer. However, there are several risk factors associated with prostate cancer, such as family history, race, diet, and age, with age being the main factor.

Detection and diagnosis

Evaluating the blood for prostate-specific antigen (PSA) levels and conducting a digital rectal exam (DRE) are two ways to screen for prostate cancer [2]. If tissue looks

suspicious, a biopsy is taken. Pathologists evaluate a biopsy using a subjective rubric called the Gleason scoring system which gives an overall summary of progression and aggressiveness of the cancer.

A cancer's grade is based on comparison of the prostate tissue as seen under a microscope to a discrete model structure. The scale runs from 1 to 5, where 1 represents cells that are very nearly normal, and 5 represents cells that do not resemble native-normal cells.

Treatment and recurrence

Prostate cancer has a high cure rate provided that the cancer is found early and the patient has a low Gleason score. Conventional cancer methods include surgical removal of tumor tissue, which is effective for removing well-defined, accessible tumors located within non-vital tissue.

However, this therapy method is highly invasive and possesses high tissue morbidity, making it unsuitable for treating small, poorly-defined tumors or tumors within vital tissue. Minimally invasive therapies, such as thermal therapies, are being investigated for better treatment of these types of tumors. These therapies can provide minimally invasive treatment alternatives to conventional resection procedures, reducing complication rates and decreasing the length of hospital stays. Exposing tissue to elevated temperatures, or hyperthermia, is being used to combat cancer. Thermal stress causes denaturation of proteins within cells which causes irreversible cell damage.

3. Nanotechnology: Multi-walled carbon Nanotubes

Definition and applications

Nanotechnology refers to a field which uses a category of materials that have at least one dimension between one nanometer and one micron. For comparison, a human hair is 60 μm in diameter and red blood cells are 7 μm in diameter while a C60 nano particle could be 1 nm in diameter. Nano particles are generally classified based on their dimensionality, morphology, composition, uniformity, and agglomeration Carbon nanotechnology refers to carbon materials within this size range. There are three forms of carbon, specifically graphite, diamond, and fullerenes. The fullerene form was discovered by Kroto, Smalley, and Curl in 1985 [58]. Within the fullerene family, there are two structures: spherical (called Buckeyballs) and tubular (called nanotubes). Their morphology is dependent on the number and arrangement of their carbon atoms. Carbon nanotubes (CNTs or

NTs) are composed of graphene sheets of sp2 bonded carbon atoms rolled seamlessly into a tubular form, capped at their ends by fullerene hemispheres. The two major configurations of CNTs are single-walled (characterized by a single graphene tube) or multi-walled (characterized by several concentric tubes nested within each other). For SWNTs, the diameter and length of CNTs varies between 1.5-3.0 nm and 20-1000 nm and 5.0 -100 nm and 1-50 microns for multiwalled CNTs, respectively.

Nanotechnology: Nanohorns

Recently, the carbon nanohorn (CNH) was recognized as a member of the fullerene family [99, 100]. A single CNH has a similar structure to a pudgy single-wall carbon nanotube (SWNT) with one closed end with a cone-shaped cap (horn) [101]. CNHs have diameters of approximately 2-5 nm. Due to strong van der Waals forces, CNHs form spherical assemblies with an overall diameter of 50-100 nm (average: 80 nm) [100, 102]. Based on their morphology, these CNH agglomerates are classified into dahlia, bud, and seed types [103]. In the dahlia-like aggregates, CNHs protrude from the surface of the aggregate like the petals of a dahlia flower. For “bud-like” aggregates, CNHs do not protrude from the surface of the aggregate.

Cell viability

Staining with trypan blue allows visualization of the amount of dead cells within a cell population. The relatively large size of trypan blue dye and the selective transport mechanisms of a cell membrane mean that trypan blue can only enter dead or dying cells whose membranes have become permeable enough while viable cells with intact membranes exclude the dye. With this technique, we were able to compare cell viability between the various cell cultures. Several pictures were taken of each cell population with viable and dead cells counted and averaged for aparticular sample. Unheated PC3 cell cultures with and without MWNTs showed high cell viability. Sub-lethal heating of cell cultures without MWNTs maintained high cell viability, similar to control (unheated) samples.