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Developing Alliances with International Universities, National Labs, and Research Units of Industry for Building Cooperation for Innovation in Engineering Education

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Abstract

The alliances have simply created groups of campuses working side-by-side rather than together. National Institutes of Technical Teacher Training and Research have created alliances from 1991 and provided academic consultancy to the project polytechnic colleges in all regions of India under World Bank assistance. They provided project-specific faculty development, state-specific learning resources, and need-based curricula. They undertook sponsored consultancy programs under the World Bank project. In the knowledge-based economy, a new type of alliance is beginning in engineering education through a common set of problems that multiple campuses need to address that they cannot solve on their own. They are offering MOOCs for faculty development. They need to develop strategic solutions and many leveraging technologies to solve some of the engineering education's toughest problems like meeting the human capital for disruptive technologies. To tackle the most pressing curriculum development problems, deemed universities and state technical universities must build alliances efficiently and effectively with International Research Universities, Research & Development units of the industries, and National Labs around common problems. A model has been developed for this. Deemed universities, state technical universities, and autonomous colleges can build alliances in the digital technology-based programs using this model.

Keywords: Institutional Alliances, Consultancy through Alliance, National Lab, MOOCs, Strategies to Develop Human Capital through Effective Alliances.

Rubrics as Versatile Educational Tool for Outcome-Based Education

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Abstract

This paper is an outcome of a synthesis of theory and an empirical study conducted in higher and technical education institutions in India. The rubrics have been in use for the last two decades in content and process based education. The educators have strongly recommended using the rubrics in outcome-based education for learning and assessment. In the current study, the rubrics are studied on four stages of outcome-based education for a wide variety of purposes. The condition for using the rubrics and the purposes of rubrics are described. The authors strongly recommend using the rubrics for self-learning and peer learning. Rubrics are used for developing process skills and higher-order skills in the students. The rubrics are used as versatile educational tools in outcome-based education with multiple purposes. At the end of the paper, suggestions are stated for statutory bodies and institutions to harness the full potential of rubrics using as a versatile educational tool.

Keywords: Rubrics, Outcome-based education, holistic rubric, analytical rubric, generic rubric, specific rubric, observation rubric, feedback rubric.

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On Constacyclic Codes over the ring $Z_4[u]/\langle u^m \rangle$

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Abstract

The constacyclic codes play an important role in many areas of modern day communication by enhancing the error correcting capabilities of codes. In this paper, it is shown that a code C which is μ-constacyclic of an arbitrary length n over R_m can be transformed into a cyclic code of double length 2n over Z_4 under a suitable map, where R_m is the ring $Z_4[u]/< u^m >$ with m ≥ 2 an integer and $\mu = 1+2u^{m-1}$ a unit in R_m . It is also shown that such a code C can be transformed into a quasi cyclic code of index 3 and length 3 times that of C under another suitable map. Further, the generators of a μ -constacyclic even length code over R_m have been obtained. We end by giving an example of the generators of (1+2u)-constacyclic code having length 8 over R_2.

Key words: Cyclic, Quasi-cyclic, Constacyclic, Generators.

Effect of Training on Self esteem, Anger, Need for Approval and Burn out: A pre-post design study on Football Referees

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Abstract

Soft skills enable us to live productive and well-adjusted lives, both personally and professionally. Thus soft skills training are imperative for all lines of work. The present work was an attempt to study the effect of training on four traits of personality i.e. self esteem, anger, need for approval and burn out of football referees by means of a pre and post training design. The sample consisted of 48 football referees from all over India. Their age ranged between 35-50 years. The training programme was conducted by Minerva Academy, Mohali (Punjab) in two phases: course I from 1-10 June 2018 & course II from 21-29 June 2018. The participants were administrated four tests, namely Self Esteem Scale, Anger Expression Inventory, Understanding the Need for Approval Scale, and Maslach Burnout Inventory (MBI). They were familiarized with administrative functions and rules. Apart from this personality development training was also imparted. After training they were again administered the four afore said tests. The results were calculated in terms of means, SD, & t-ratio of correlated means to study the effect of training. The t-ratio for all the three areas showed highly significant improvement as all the t-ratio was significant beyond 0.01 levels. This meant that in a job, soft skill training should be made integral part of induction training of sports referees.

Keywords: soft-skills; referees; training.

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Effect of Treated Waste Water on Flexural and Split Tensile Strength of Concrete of Variable Grades

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Abstract

This research study discusses the efficient use of huge amounts of treated waste water which is being generated all over the world and especially in the city of Chandigarh. With a treating capacity of 56.25 MGD of waste water out of 70 MGD of waste water that is being generated, the city has an effective system already in place. This treated waste water which is being drained off into surface streams can be used as mixing water in the concrete industry. Requirement of water for making structural concrete is a major area in which treated water can be efficiently used. In this paper the flexural and split tensile strength of M25, M30 and M35 grades of concrete were tested with different combinations of potable and treated waste water. From the results, in can be concluded thatin general, the mixes prepared using 50% treated waste water and 50% potable water gave satisfactory results. Thus, the use of this combination of mixing water is recommended over the use of 100% potable water, saving enough water for human consumption especially during hot weather when availability of potable water is scanty.

Keywords: PPC Cement, Flexural Strength, Split Tensile Strength, Treated Waste Water.

Implementing Flipped Classroom in Higher Education Institutions – Issues and Challenge

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Abstract

Flipped classroom has a drastic effect on the traditional colleges and universities and thus playing important role in providing high quality education to the modern learners. In flipped classroom model, the lower order skills (remembering, understanding) are achieved by the learner himself/herself and higher order skills (analysis, synthesis and evaluation) are manoeuvre by the teacher for the students in the classroom. But the problem arises when the educators, who are used to the traditional method of teaching, may not know how to prepare pre-recorded instructional material and what to develop for classroom activities. And students who are also used to rote traditional learning don't know how to learn from pre-recorded instructional material and what to do in the classroom. Flipped classroom approach shows both positive and negative outcomes. To carry off the flipped classroom model in Higher Education Institutions (HEIs) successfully at one time appears salient but is an arduous task. The present paper focusses on significance based on literature review, implementation and Issues and Challenges.

Keywords: Flipped classroom, teaching learning process, Issues & Challenges.