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Circulars

Building and Construction Authority

CHANGES TO BUILDING INFORMATION MODELLING (BIM) E-SUBMISSION REQUIREMENTS FOR PLAN SUBMISSION TO BCA

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### SPECIALIST DIPLOMA IN INTERIOR & LANDSCAPE DESIGN

Interior and landscape design is about exploring space within a building and outside the building. And with design disciplines merging across the board, aspiring interior and landscape architects will have to take inspiration from architecture, landscape, product, graphic art and visual culture to perceive space, while considering wider issues such as the environment, functions and form. The Specialist Diploma in Interior & Landscape Design is structured to equip you with the knowledge of principles and theories in interior and landscape design, and how they are applied in real life. From idea conception to planning and creating interior and exterior spaces, you will explore new technologies to improve your design solutions and gain critical knowledge of building and material science to understand the behavioural, social and physical requirements of design in the built environment. Upon graduation, you will qualify to work as technical specialists in the interior and landscape design industry.

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<tr>
<td>BCA Academy, 200 Braddell Road, Singapore 579700</td>
<td>15 Jul 2016 to 30 Apr 2017 1830 to 2130 Starting in mid Jan/Feb 2017 Approximately 1 year including term break</td>
<td>Contact Person: Customer Service Officer Email: <a href="mailto:bca_academy@bca.gov.sg">bca_academy@bca.gov.sg</a> Phone: 6248 9999 Fax: 6258 0558</td>
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### SPECIALIST DIPLOMA IN BUILDING INFORMATION MODELING

Building Information Modelling (BIM) has become one of the most exciting developments in the building and construction industry in recent years. As an integrated design and documentation tool used to enhance communication and collaboration among all the project stakeholders, BIM has already begun changing the way architects, engineers, contractors and building owners work together. With strategic implementation, BIM will significantly improve the design and construction process through more integrated project coordination. BIM has also been identified as one of the key technologies to be adopted under BCAs S$250-million Construction Productivity and Capability Fund (CPCF) to help the local construction industry improve productivity and enhance its capability. The Specialist Diploma in Building Information Modeling (BIM) aims to impart in-depth knowledge on BIM fundamentals and develop strategic skills for BIM project planning and implementation. It will focus on BIM applications for effective design analysis, productive design and construction coordination and holistic facility management. BIM standards and guidelines as well as BIM project case studies will also be included in this course. Upon graduation, participants can look forward to career opportunities as BIM Project Coordinators, BIM Modelers/Operators, BIM Consultants/ Specialists, and BIM Managers.

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In land scarce Singapore, the building and construction industry plays a critical role in our city's advancement and urban regeneration. With a high volume of building and infrastructure, the construction industry is offering great employment prospects and earning potential for construction professionals, such as higher level supervisors, project coordinators, construction managers and project managers. The Specialist Diploma in Construction Management will equip you with skills that are essential in managing construction projects successfully. The comprehensive curriculum ranging from technical subjects, quality, safety, contract & cost management to legal studies and information technology will prepare you for an outstanding career in the construction industry.

**Recent Advances in Metal Additive Manufacturing at Manufacturing Demonstration Facility: Role of in-situ Process Monitoring, Computational Modeling, and Advanced Characterization**

Additive manufacturing (also known as 3D printing) of materials is considered as a disruptive technology to produce limited number of high value components with topologically optimized geometries and functionalities. Realization of the above potential for real-world applications is stifled by lack of standard computational design-tools; material characteristics, methods to probe thermo-mechanical processes under in-situ conditions, and microstructural homogeneity, as well as, anisotropic static- and dynamic-properties. This presentation will discuss the needed interdisciplinary science and technology ranging from robotics and automation, process control, multi-scale in-situ and ex-situ characterization methodologies, as well as, high-performance computational tools to address these challenges. Specific focus on understanding and controlling physical processes will be stressed, including powder/wire/tape, powder sintering, adsorption and dissolution of gases, microstructure evolution under extreme thermal gradients, and residual stress evolution under complex thermal gradients. Emerging pathways to scale up metal additive manufacturing (in Fe-, Al-, and Ti- alloys to large sizes (>1 m) and higher productivity (5 to 20 kg/h), while maintaining the mechanical performance and geometrical flexibility expected by the additive manufacturing, will be discussed.

**Formwork Design and Safety with Code of Practice SS580:2012**

Formwork structures have always been a highly hazardous item in the construction industry. Recent failures of formworks in Singapore have raised considerable alarm in the industry, the government and the public. This one-day course on formwork design and safety to revised standards and EuroCode aims to address this critical concern, not only of the authorities but also of builders, contractors, and developers, by accomplishing the following: Provide background to this critical topic in workplace safety Review a number of failures of formworks in Singapore and abroad to convey understanding of causes Discuss techniques to identify and evaluate the hazards, and manage the risks Provide useful information on revised standards in this area Describe significant parts of the new Code of Practice for Formwork SS580:2012 to facilitate its use by designers and contractors. The focus will be on basic concepts and procedures currently in use for formwork in the construction industry. In addition, the critical aspects of formwork design with the recently increased factor of safety will be covered. Objectives will include identification of principal contributory factors to formwork failures and their underlying root causes, and discussing how the new Code can eliminate or alleviate the problems.
Technical Seminar on "Energy Use in Process Industries - Management, Optimisation & Innovation"

A full-day Technical Seminar for Energy Management Professionals, Practitioners and Singapore Certified Energy Managers (SCEMs) to learn, share and emulate best practices in Energy Optimization and Efficiency.

Venue
IES Green Building@Bukit Tinggi aka Brian Chang Building: Training Rooms 1 and 2 (2nd floor - accessible via lift), 70 Bukit Tinggi Road, The Institution of Engineers, Singapore, Singapore 289758

Date and Time
11 Nov 2016 to 11 Nov 2016
0830 to 1700
8.30am to 5.00pm
Friday, 11 November 2016

Contact Details
Contact Person: Colin Fong
Email: colin.fong@iesnet.org.sg
Phone: 64611236
Fax:

Institution of Engineers, Singapore
18 Nov 2016 to 18 Nov 2016
Safety & Risk Management Systems for Construction Site Safety - 9th Run

Introduction: Safety in construction sites is of paramount importance not only to protect oneself but also to ensure safety for fellow personnel on site. This programme is for stakeholders in construction projects (Resident Engineers, Resident Technical Officers, Site Supervisor etc) and it explains the concepts related to risk management & control which can be applied to activities on construction site. The Programme also discusses safety management systems and safety audits and how to report and investigate accidents related to site activities. Objective: Participants can apply the risk management & control concepts to create a safer workplace for themselves and their fellow site personnel. They will have an appreciation of how safety management systems and audits can be set up and how it can improve safety on site. They can also systematically investigate accident related to site activities and file reports to allow subsequent review and improvement.

Venue
IES Academy@Jurong East

Date and Time
18 Nov 2016 to 18 Nov 2016
1800 to 2200
1800hrs to 2200hrs
29 November 2016, Friday

Contact Details
Contact Person: Lillian Seow
Email: lillian.seow@iesnet.org.sg
Phone: 6460 4241
Fax: 6563 6030

Institution of Engineers, Singapore
29 Nov 2016 to 29 Nov 2016
Supplementary Cementitious Materials (SCM) for Reinforced Concrete - 12th Run

Introduction: With the rapid global infrastructure development, there is a new focus on sustainable usage of concrete. Using supplementary cementitious materials (SCM) like silica fume, pulverized fuel ash or ground granulated blast furnace slag to replace or compliment cement is one practical area to achieve sustainability which is gaining importance. Stakeholders in construction industry (Owners, Architects, Engineers, Resident Technical Officers, Site Supervisors etc) are handling more demanding and complex projects in current development projects and may involve working with SCM. This programme aims to provide information on the nature of these SCM and the resulting properties of concrete batched using such materials to participants to allow them to better execute their projects. Objective: At the end of this module the participants will have a better understanding the nature of SCM and the key properties of concrete batched using such materials.

Venue
IES Academy@Jurong East

Date and Time
29 Nov 2016 to 29 Nov 2016
1500 to 2200
3.00pm to 10.00pm
29 November 2016, Tuesday

Contact Details
Contact Person: Lillian Seow
Email: lillian.seow@iesnet.org.sg
Phone: 6460 4241
Fax: 6563 6030

Institution of Engineers, Singapore
30 Nov 2016 to 30 Nov 2016
Increasing Productivity: New Developments in Construction Methods & Materials - 1st Run

Introduction: Development projects are increasingly demanding as the clients becomes more sophisticated and requires their project to be built with better productivity and sustainability. At the same time, over the years there has been a gradual accumulation of practical experience around the world on specific methods of construction like prefabricated-prefinished volumetric construction (PPVC) and materials like self-compacting concrete
(SCC) and cross laminated timber (CLT). These materials and method of construction may be considered as a means to achieve sustainability and improve productivity under the right conditions. Stakeholders (Designers, Resident Engineers, Resident Technical Officers, Site Supervisors, etc) would need to have some understanding of how these materials and method can be used as they might be handling projects involving them.

**Venue**
IES Academy@Jurong East

**Date and Time**
30 Nov 2016 to 30 Nov 2016
1500 to2200
1500hrs - 2200hrs
30 November 2016, Wednesday

**Contact Details**
Contact Person: Lillian Seow
Email: lillian.seow@iesnet.org.sg
Phone: 6460 4241
Fax: 6563 6030

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**Building and Construction Authority**

**SPECIALIST DIPLOMA IN LEAN CONSTRUCTION**

Drawing from the lean principles originally applied in manufacturing sector, lean construction adopts production management approach to project delivery. It strives to optimise project delivery through continuous improvements to minimise waste and maximise values to all stakeholders. This programme aims to equip industry practitioners with the knowledge of lean principles, lean construction approaches and methodologies for higher productivity.

**Venue**
BCA Academy, 200 Braddell Road, Singapore 579700

**Date and Time**
1 Jan 2017 to 4 Jun 2017
0000 to0000
2 evenings per week
Starting in mid Jan/Feb 2017 ; 5 months lesson + 4 months Final Project

**Contact Details**
Contact Person: Customer Service Officer
Email: bca_academy@bca.gov.sg
Phone: 6248 9999
Fax: 6258 0558

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**Building and Construction Authority**

**SPECIALIST DIPLOMA IN VIRTUAL DESIGN & CONSTRUCTION (VDC)**

Virtual Design and Construction (VDC) is an integrated approach that combines Building Information Modelling (BIM) and advanced management methods to improve productivity. The programme will provide insights into VDC methodologies such as Integrated Concurrent Engineering, and Process and Production Management, where participants will be able to apply these VDC methodologies to streamline project workflow and improve business performances. VDC will benefit both consultants and contractors to achieve productivity gains in upstream and downstream of both design and construction phases.

**Venue**
BCA Academy, 200 Braddell Road, Singapore 579700

**Date and Time**
1 Jan 2017 to 4 Jun 2017
0000 to0000
2 evenings per week (some courses may be held on Saturdays)
Starting in mid Jan/Feb 2017 ; 5 mths lesson + 4 mths Final Project

**Contact Details**
Contact Person: Customer Service Officer
Email: bca_academy@bca.gov.sg
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**Building and Construction Authority**

**Specialist Diploma in Construction Productivity (1)**

This programme covers the latest trends and emerging game-changing technologies such as Building Information Modelling (BIM), Virtual Design & Construction (VDC), Pre-fabricated Bathroom Unit (PBU), Pre-fabricated and Prefinished Volumetric Construction (PPVC), and Cross Laminated Timber (CLT). It aims to hone the skills and enhance the knowledge of built environment professionals using more focused intensive learning methods so as to accelerate the development of a higher professional competency in construction productivity. Effective from 1 Jan 2016, all A1 to B1 contractors are required to have at least one full-time employed Registrable Professional/Professional/Technical personnel (RP/P/T) to have either completed or registered to attend this course in their next BCA Contractors Registration System (CRS) renewal; The effective date for L6 contractors for CR and ME workheads (except CR14, ME07 and ME13) will be their next CRS renewal after 1 Jan 2017.

**Venue**
BCA Academy, 200 Braddell Road, Singapore 579700

**Date and Time**
1 Jan 2017 to 5 Jun 2017
0000 to0000
APPLICATION PERIOD: 26 Sep

**Contact Details**
Contact Person: Customer Service Officer
Email: bca_academy@bca.gov.sg
Phone: 6248 9999
Design for Manufacturing and Assembly (DfMA) is helping revolutionise construction, making it faster, safer and more reliable. It is a process whereby buildings are designed for ease of off-site manufacturing and efficiency of on-site assembly. To enjoy the benefits of DfMA for construction industry, practitioners will need to re-think its project design approaches and construction processes. This programme aims to equip industry professionals with the knowledge and skills to apply DfMA principles in construction projects, so as to achieve higher construction productivity.

Venue: BCA Academy, 200 Braddell Road, Singapore 579700
Date and Time: 1 Jan 2017 to 4 Jun 2017
Contact Details: Contact Person: Customer Service Officer
Email: bca_academy@bca.gov.sg
Phone: 6248 9999
Fax: 6258 0558

Architectural designs in Singapore and many parts of the world have evolved rapidly with computerisation and good technical support is critical to ensure delivery of such quality developments. Cognizant of the governments call for productivity and sustainability, building projects have to be completed quickly and to high standards. Hence there is a need for skilled and knowledgeable technologists to assist the Architectural Consultants and Contractors to achieve this goal. The Specialist Diploma in Architectural Technology will help prepare you to meet the challenges of the workplace, covering important topics such as project drawing documentation, local building development guidelines, building regulations, integrated online submission of plans for approval, to detailing and good practices. You will also get to explore green building designs and try your hand at providing creative universal design solutions for the built environment.

Venue: BCA Academy, 200 Braddell Road, Singapore 579700
Date and Time: 1 Jan 2017 to 1 Jan 2018
Starting in mid Jan/Feb 2017
Approximately 1 year including term break
Contact Details: Contact Person: Customer Service Officer
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Phone: 6248 9999
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The design and construction of building projects is a highly complex and demanding process, especially with the increased sophistication of the various disciplines involved, such as architecture, surveying, construction and engineering. Delivering a project of such complexity within the right budget, quality and time-scale is critical in meeting clients expectations. Building cost management provides owners, developers, architects and contractors the highest degree of cost predictability over the life cycle of a building with the use of cost modelling and management techniques. The Specialist Diploma in Building Cost Management prepares you to manage construction cost planning and control right from project inception to the disposal phase of a building. It provides you an opportunity to gain industry-specific skills and experience in cost estimates and analysis, budget forecasts, facilities planning, conceptual studies and bid comparisons for the design and construction of property. The curriculum also covers capital and operating cost assessment skills and project control decisions. Upon graduation, you can find career opportunities as quantity surveyors or cost managers in Singapore's booming construction industry.

Venue: BCA Academy, 200 Braddell Road, Singapore 579700
Date and Time: 2 Jan 2017 to 1 Jan 2018
Starting in mid Jan/Feb 2017
Approximately 1 year including term break
Contact Details: Contact Person: Customer Service Officer
Email: bca_academy@bca.gov.sg
Phone: 6248 9999
Fax: 6258 0558
Environmental sustainability is increasingly gaining ground in the building and construction industry, buoyed by global concerns on climate change and limited natural resources. With the rising trend towards green technologies and renewable energy in the built environment, there is now a critical need for professionals that are proficient in energy management to operate buildings for optimal building performance. The Specialist Diploma in Facility & Energy Management equips you with essential knowledge to plan and manage building operations and maintenance efficiently. The programme also incorporates Energy Management and BIM for Facilities Management modules to give you the added competitive edge. Upon graduation, you can work effectively as facility management executives in management corporations, building maintenance and building refurbishment firms.

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**SPECIALIST DIPLOMA IN M&E COORDINATION**

The growing complexity of Mechanical and Electrical (M&E) services in commercial, residential, industrial and infrastructure projects have made the role of an M&E coordinator increasingly important. Proper planning and coordination of M&E services are central to the success of building projects, playing key roles in building aesthetics, operational efficiency and optimal building maintenance. The Specialist Diploma in M&E Coordination is designed to meet the increasing sophistication in building design as demanded by the market. It aims to equip individuals with the technical knowledge of industry best practices as well as managerial skills to undertake both conventional and specialised building projects. The Specialist Diploma in M&E Coordination is recognised by BCA as a technical qualification that is acceptable for M&E work head registration under BCAs Contractors Registry. Upon graduation, participants can look forward to become M&E coordinators, property executives and facilities executives. The Specialist Diploma also serves as a stepping-stone to technically advanced positions such as project managers or M&E managers.

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**5-DAY COURSE FOR APPOINTED PERSON - LIFTING OPERATIONS 3RD RUN**

As the Singapore Government pushes for higher productivity in various sectors, more and more cranes will be deployed at various work places. Use of cranes at site involves many people from various organisations, such as the crane manufacturer, site occupier, crane contractor, and various sub-contractors that use the cranes. According to the latest Singapore Standard on Safe Use of Tower Cranes SS 559:2010, it is crucial that one person be appointed to have overall control of the cranes. This appointed person shall be notified formally in writing of their appointment. This course is aimed at anyone who is required to plan safe systems of work, using lifting equipment and intends to take up this position as an appointed person. It is recommended that prior to attending this course, individuals should have some experience of working with lifting equipment, especially mobile cranes and tower cranes. Target Audience: Managers, engineers and safety officers involve in site planning of safe systems of work, crane selection, project management, installation, commissioning, specification and consultancy of cranes at various jobsite, such as construction, shipyard, ship repairing, A&A, Oil & Gas, etc.

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<td>IES Academy@Jurong East &amp; BCA Academy@Braddell</td>
<td>20 Feb 2017 to 1 Mar 2017 0830 to 1800 9.00am - 6.00pm 20, 22, 25, 27, 28 Feb &amp; 1 Mar 2017</td>
<td>Contact Person: Florence Lee Email: <a href="mailto:florence.lee@iesnet.org.sg">florence.lee@iesnet.org.sg</a> Phone: 6460 4248 Fax: 65636030</td>
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