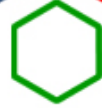


Sugar Research Institute

TRAINING PROGRAMS



SOTrain

SUPERVISOR AND OPERATOR TRAINING PROGRAM

Information on the SOTrain Package



Queensland University of Technology



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INFORMATION ON THE SOTRAIN PACKAGE

OVERVIEW

An improved methodology for the training of factory supervisors and operators has been developed to provide for 'at factory' learning via self-paced modules which can be undertaken at any time under the guidance of a factory Trainer. The acronym SOTrain has been applied to the new training program. SOTrain consists of Trainee and Trainer Resources which include notes, training activities and tasks such as walkthrough tour guides of the stations, videos, competency-based assessments and training guides. The materials are available on the web using the Blackboard platform at QUT. While many activities are best undertaken on-line the material for each module can be downloaded if that better suits the training program at individual mills. On-line usage is preferred for animated flowsheets, videos, spreadsheets and the interactive assessment questionnaires.

As a result of feedback from factory staff at workshops conducted at the start of the project to develop SOTrain, eight modules have been developed by QUT. These are:

1. Introduction to sugar factory processing
2. Overview of sugar factory operations
3. Steam and power generation
4. Extraction
5. Clarification and mud filtration
6. Juice heating and evaporation
7. Pan boiling
8. Fugalling and sugar drying

High Level Designs (HLDs), which form the templates on which the course content, activities and assessments for each module were developed, were prepared with the assistance of factory staff.

A brief description of the recommended application of the modules follows.

Module 1 "Introduction to sugar factory processing" was developed to be suitable for new staff to become familiar with the sugar manufacturing process and terminology. It is pitched as an introduction only and does not cover detailed technical aspects of individual stations. The primary objective of this module is to

ensure that new staff are familiar with all the processing operations at a superficial level, and are aware of the role that his/her particular station or job has in the factory. Prior to undertaking any of the other modules it is recommended that the new Trainee completes Module 1.

Module 2 “Overview of sugar factory operations” is the main technical module for supervisors in terms of managing the operations of the whole factory in a coordinated way. It is also appropriate for very experienced operators with a strong interest in the whole-of-factory operations. The main topics in this module are:-

- Notes on the operations and functions of each station of the factory
- Water balance and effluent treatment
- Fuel stockpile management
- Role of supervisors coordinating the overall operations of the factory
- Guidelines on monitoring the operations of the factory and individual stations
- Interrelationship of target crushing rate and performance criteria of stations
- Useful equations for sugar manufacture
- Procedures for start up and shutdown of individual stations
- Cane payment
- Sugar quality
- Pol balances, sugar recoveries, undetermined loss
- Analyses of lost time
- Revenues and costs of sugar factory operations

Module 2 includes a pocket guide “Criteria to assess the performance of a station” which can be downloaded and carried by the supervisor.

Modules 3 to 8 for the most part align with the operational functions on individual stations and are suitable for training of operators. It is in these areas and sections of module 2 where SRL traditionally has provided training for supervisors in intensive face to face courses for Engineering Supervision and Chemical Process Supervision. Modules 5 to 8 have been traditionally provided for operator training.

PROCEDURES FOR ACCESS TO SOTRAIN

In order to facilitate access, each mill or milling company that has syndicate membership into the SOTrain program has appointed a Site Coordinator. Site Coordinators are responsible for requesting QUT or SRI to provide the required access to the SOTrain modules for their Trainee or Trainer mill staff (contact ctcbenquiries@qut.edu.au or info@sri.org.au). Details of changes to access for staff are submitted by the Site Coordinator using the User Accounts form/spreadsheet provided to them by QUT. QUT will then undertake the required access changes. Security system protocols require users to create their own Username and Password. Once users/staff have created their Username and Password, they are registered into the SOTrain website and provided with access to Trainee or Trainer Resources, depending on the type of access requested.

While most resources can be printed, the resources which are designed for interactive learning and provision of immediate feedback on assessments can only be accessed on-line.

An annual fee is levied on each of the syndicate member mills to cover the costs for QUT to provide on-line access to SOTrain for their staff. Funds from this levy are also used by QUT staff to upgrade the content and competency assessments in the modules. There is no restriction on the number of staff from a single mill who can access SOTrain.

RESULTS AND CERTIFICATES

The current training material is structured as a resource to be used in conjunction with on site training. The content is not currently mapped to any specific training package.


The assessments and quizzes are marked on site by the Trainer. No certification is currently provided directly from SOTrain.

EXAMPLE OF COURSE CONTENT

The training material is comprised of both printable and on line course content. The printable course content for the module “Fugalling and sugar drying” is illustrated in Figure 1 and the on line course structure for the this module is shown in Figure 2 and Figure 3.

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Fugalling and Sugar Drying: Trainee Resources | Notes, Activity Pack and Other Resources


Trainee Resources

The following resources are required by each Trainee.


Instructions

1. Download the **Notes and Activity Pack**, and **Other Resources** below and read the instructions for each topic.
2. A **Training Schedule** is provided below only as a guide but contains links to currently available **online interactive resources** needed for some topics which are described in the printed materials.
3. Read the topics assigned to you by your Trainer. Follow the instructions in each topic.
4. Where online activities are indicated, click on the corresponding links below to complete the activity online.

Notes and Activity Packs



Notes are contained in each topic of the Overview of Factory Operations module. It provides information for each topic and is designed to accompany mill-specific documentation relevant to this module and its topics. **As such, the training package is to be viewed as a complete package only when used in conjunction with your relevant mill documentation.**




Activity Packs for each topic consist of activity sheets. Complete all the activity sheets as instructed by your Trainer during the training session for each topic. Each activity sheet outlines the instructions you need to follow, key learning outcomes, resources required for the activity, tasks, and worksheets, answer sheets or record sheets to be completed during the activity.

- [8 Fugalling and Sugar Drying Module Overview](#)
- [8_1 Overview of Fugal, Crystalliser and Dryer Stations](#)
- [8_2 High Grade Batch Fugals Station](#)
- [8_3 Operation of Continuous High Grade Fugals](#)
- [8_4 The Sugar Dryer Station](#)
- [8_5 Low Grade Massecuite Processing](#)

Fugal module printable course content

Other Resources

The following are additional resources for the topics in Fugalling and Sugar Drying module:



- [8 Fugalling and Sugar Dryer Glossary](#) - a reference and learning aid
- [Batch Fugal Model \(CentrifugalModel_final\(1\).xlsx\)](#)

Figure 1 Fugal printable course content

Fugalling and Sugar Drying Training Schedule

No	Topic	Study	Time
BASIC LEVEL			
No 8-1.1	Topic 1: Overview of Fugal, Crystalliser and Dryer Stations 5 hours	Study topic content by working through the Overview of Fugal, Crystalliser and Dryer Stations notes	2 hours
No 8-1.2		Read related mill documents	
No 8-1.3		Fugalling and Sugar Drying Quiz	1 hour
No 8-1.4		Fugal, Crystalliser and Dryer Station Tour Activity	2 hours
No 8-2.1	Topic 2: High Grade Batch Fugal Station 6 hours	Study topic content – High Grade Batch Fugal Station notes <ul style="list-style-type: none"> · Fugal Cycle Video 2015 Please note that the video will pause when it is still downloading. If this happens, please wait for a few minutes before pressing the the play button again.	3 hours
No 8-2.2		Read related mill documents	
No 8-2.3		Reading and Questionnaire Activity	

Figure 2 Fugal on line course structure

No 8-2.4		Batch Fugal Model Interactive Activity	1 hour
No 8-2.5		High Grade Batch Fugal Tour Activity	2 hours
No 8-3.1	Topic 3: Operation of Continuous High Grade Fugals 3 hours	Study topic content – Operation of Continuous High Grade Fugals notes	1 hour
No 8-3.2		Read related mill documents	
No 8-3.3		Question and Answer Activity	
No 8-3.4		Continuous High Grade Fugals Tour Activity	2 hours
No 8-4.1	Topic 4: The Sugar Dryer Station 6 hours	Study topic content – The Sugar Dryer Station notes <ul style="list-style-type: none"> • Clean Flights Video • Flights with the Coating of Sugar Video 	3 hours
No 8-4.2		Read related mill documents	
No 8-4.3		Question and Answer Activity	
No 8-4.5		The Sugar Dryer Station Tour Activity	3 hours
No 8-5.1	Topic 5: Low Grade Massecuite Processing 4 hours	Study topic content – Low Grade Massecuite Processing notes	2 hours
No 8-5.2		Read related mill documents	
No 8-5.3		Reading and Exercise Activity	
No 8-5.4		Low Grade Massecuite Station Tour Activity	2 hours

Figure 3 Fugal on line course structure (continued)