# MATHEMATICS IN INDUSTRY STUDY GORUP 2020

## Monday 13 January to Friday 17 January 2020

#### **PROGRAMME**

### Monday 13 January 2020

7:00 - 8:00	Breakfast
8:30 - 8:45	Board shuttle bus to University of Zululand
9:00 – 9:30	Registration Loading presentations
9:30 – 9:45	Chairperson: David Mason  • Syamala Krishnannair
	Official Opening and Welcome
	Welcome address: Professor Kunene Dean of Science University of Zululand
9:45 - 13:00	Problem Presentations
9:45 - 11:30	Chairperson: Neville Fowkes
	Each Industry Representative has available 30 minutes including questions
	<ul> <li>Jennifer Fitchett: Models for honeybee arrival and blossom phenology</li> </ul>
	<ul> <li>Denis Ndanguza: Modelling the turbulent flow in Lake Kivu</li> </ul>
	Richard Loubser: Juice holdup detection in a sugar cane diffuser
	Richard Loubser: Image analysis of sugar cane preparation
11:30 – 11:45	Morning Tea
11:45 - 13:00	Chairperson: Graeme Hocking
	<ul> <li>Anne Fitchett and Gideon Fareo: Green roofs to mitigate the Urban Heat Island</li> </ul>
	Thama Duba: Chessboard waves
	Montaz Ali: Optimization problem
13:00 - 14:00	Lunch hour
14:00 – 14:30	Formation of Study Groups Room allocation
14:30 - 16:00	Study Group meetings
16:00 - 16:30	Afternoon Tea
16:30 - 18:00	Study Group Meetings
18:00 - 19:00	Dinner hour
19:30	Shuttle bus departs for Mtunzini
	Free evening

### Tuesday 14 January 2020

7:00 - 8:00	Breakfast
8:30 - 8:45	Board shuttle bus to University of Zululand
9:30 - 11:00	Study Group meetings
11:00 - 11:30	Morning Tea
11:30 - 13:00	Study Group meetings
13:00 - 14:00	Lunch hour
14:00 - 16:00	Study Group meetings
16:00 – 16:30	Afternoon Tea
16:30 - 18:00	Progress Reports
	Chairperson: Tim Myers
	Each Study Group has 10 minutes to present progress on their problem
	Presentations made by Student Moderators
18:00 - 19:00	Dinner hour
19:30	Shuttle bus departs for Mtunzini
	Free evening

### Wednesday 15 January 2020

7:00 - 8:00	Breakfast
8:30 - 8:45	Board shuttle bus to University of Zululand
9:30 - 11:00	Study Group meetings
11:00 - 11:30	Morning Tea
11:30 - 13:00	Study Group meetings
13:00 - 14:00	Lunch hour
14:00 - 16:00	Study Group meettings
16:00 - 16:30	Afternoon Tea
16:30 - 18:00	Progress Reports
	Chairperson: Stephen Wilson
	Each Study Group has 10 minutes to present progress made during
	Wednesday on their problem.
	Presentations by students moderators.
18:00 - 19:00	Dinner hour
19:30	Shuttle bus departs for Mtunzini
	Free evening

### Thursday 16 January 2020

7:00 - 8:00	Breakfast
8:30 - 8:45	Board shuttle bus to University of Zululand

9:30 - 11:00	Study Group meetings	
11:00 - 11:30	Morning Tea	
11:30 - 13:00	Study Group meetings	
13:00 - 14:00	Lunch hour	
14:00 - 16:00	Study Group Meetings	
16:00 - 16:30	Afternoon Tea	
16:30 - 18:00	Study Group meetings	
	Preparation for Friday presentations	
	Preparation of brief texted reports	
18:00 - 19:00	Dinner hour	
19:30	Shuttle bus departs for Mtunzini	
There are no Progress Presentations on Thursday evening		

#### Friday 17 January 2020

7:00 - 8:00	Breakfast
8:30 - 8:45	Board shuttle bus to University of Zululand
9:30 - 12:45	Report back session to Industry
	Moderators report on progress and recommendations (25 minutes)
	Industry representatives have 5 minutes to comment on progress
9:30-11:00	<ul> <li>Chairperson: Montaz Ali</li> <li>Models for honeybee arrival and blossom phenology</li> <li>Modelling the turbulent flow in Lake Kivu</li> <li>Juice holdup detection in a sugar cane diffuser</li> <li>Image analysis of sugar cane preparation</li> </ul>
11:00-11:15	Morning tea
11:15–12:45	Chairperson: Masood Khalique      Green roofs to mitigate the Urban Heat Island     Chessboard problem waves     Optimization problem
12:45 – 13:00	Chairperson: David Mason
13:00 - 14:00	Lunch hour
14:30	Airport transfer for a few staff who have made special arrangements
15:00	Shuttle bus departs for Mtunzini