

29 August 2019

Professor Mukti Mishra, PhD President Centurion University Office of the President 17 Forest Park, Bhubaneswar 751009 Odisha. India

Dear Professor Mukti Mishra,

Western Sydney University is pleased to invite a delegation from Centurion University, India to visit our campuses during their visit to Sydney between October and November, 2019.

The invitation is extended to the delegation comprising:

Title	Given Name(s)	Surname	Passport No.	Date of expiry
Dr.	Sagar	Maitra	T0600893	07/08/2029
Mr.	Durga Prasad	Padhi	P1782468	16/02/2027
Dr.	Mir Sadat	Ali	Z4533783	25/07/2029
Mr	Sardar Ranjit	Singh	T0598349	28/07/2029
Dr.	Satya Prasad	Nanda	T0599094	30/07/2029
Mr.	Dinkar Jagannath	Gaikwad	T0599092	30/07/2029
Prof.	Sangram Keshari	Swain	N7054001	28/04/2026

The main purpose of this visit is for the Centurion University delegation to meet with representatives from Western Sydney University to gain insight into the protected cropping and greenhouse projects and tour these facilities at the Hawkesbury Campus.

Western Sydney University is very pleased to have the opportunity to meet with Centurion University.

We understand that the delegation will cover their own travel costs; such as airfare, accommodation, meals and transport.

Should you wish to discuss this matter further, or require any more assistance with information about your visit please contact Anna Grankina, Delegations Officer, International Partnerships on telephone +61 (02) 9685 9750 or email a.grankina@westernsydney.edu.au

Yours faithfully

Vingh

Associate Professor Linda Taylor **Pro Vice-Chancellor, International** T: +612 9683 8105 | E: l.taylor@westernsydney.edu.au

> Western Sydney University ABN 53 014 069 881 CRICOS Provider No: 00917K Locked Bag 1797 Penrith NSW 2751 Australia westernsydney.edu.au



Bijan Kumar Das <bijan.das@cutm.ac.in>

# Fwd: Report on WSU, Greenworks and Centurion Training

**PRAKASH KVD** <prakash.kvd@cutm.ac.in> To: Bijan Kumar Das <bijan.das@cutm.ac.in> Thu, Apr 22, 2021 at 10:41 PM

------ Forwarded message ------From: **Dr. Sangram Keshari Swain** <sangram@cutm.ac.in> Date: Thursday, April 22, 2021 Subject: Fwd: Report on WSU, Greenworks and Centurion Training To: PRAKASH KVD prakash.kvd@cutm.ac.in>

------ Forwarded message ------From: **Saskia Blanch** <Saskia.Blanch@icii.com.au> Date: Thu, Nov 7, 2019 at 4:25 AM Subject: Report on WSU, Greenworks and Centurion Training To: Dr. Sangram Keshari Swain <sangram@cutm.ac.in>, rfthomas@westernsydney.edu.au <rfthomas@westernsydney.edu.au> Cc: Priti Krishna <P.Krishna@westernsydney.edu.au>, durgaprasad@cutm.ac.in <durgaprasad@cutm.ac.in>

Dear Dr Sangram, Durga, Priti and Richard,

Attached is a report I have prepared on our time together last week, which may be useful for you and your networks.

I will put it on the Greenworks website under News and then do posts from Facebook and LinkedIn, linking back to there.

If you are on either of those social media sites, please follow AIS Greenworks and myself personally.

Thank you to everyone for a successful week.

Kind Regards,

Saskia Blanch Business Development | AIS GREENWORKS



PHONE 0414 333 996 OFFICE 11/3 Packard Ave Castle Hill NSW 2154 ONLINE www.aisgreenworks.com.au

A DIVISION OF ICI INDUSTRIES PTY LTD | www.iciindustries.com.au IRRIBIZ • IBIS CONTROLS • CUSTOM BUILT STAINLESS • AIS GREENWORKS • TOTAL LEISURE From: Dr. Sangram Keshari Swain <sangram@cutm.ac.in>
Sent: Wednesday, 6 November 2019 4:07 PM
To: Saskia Blanch <Saskia.Blanch@icii.com.au>
Cc: Priti Krishna <P.Krishna@westernsydney.edu.au>; sangram@cutm.ac.in
Subject: Re: WSU and Greenworks photos

Dear Ms. Saskia,

Thanks a lot for the mail.

I have downloaded all the photographs. You may delete these from dropbox.

Thank you for all your support during our visit.

On Tue, Nov 5, 2019 at 5:58 AM Saskia Blanch <Saskia.Blanch@icii.com.au> wrote:

Dear Priti and Dr Sangram Keshari Swain,

It was lovely spending time with you all last week and I hope you have returned home happy, satisfied and inspired.

Here is a drop box link to all the photos of our time together.

https://www.dropbox.com/transfer/cap\_pid\_ft%3AAAAAALiKIOnDktVryZtRfQ2UjpsD9COiSEyrBmskjJQb W6cas8aec5U

Please download as soon as possible as I am going to cancel my drop box subscription soon.

Please don't hesitate to contact me if there are any issues.

Kind Regards,

Saskia Blanch Business Development | AIS GREENWORKS



PHONE 0414 333 996 OFFICE 11/3 Packard Ave Castle Hill NSW 2154 ONLINE www.aisgreenworks.com.au

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#### With Thanks & Regards.....

#### Dr. Sangram Keshari Swain

Dean, Students' Welfare (Bhubaneswar Campus) Professor In-Charge, Examinations (Bhubaneswar, Bolangir, Rayagada Campus) Associate Professor, Department of Computer Science & Engineering (Bhubaneswar Campus) Centurion University of Technology & Management Email: sangram@cutm.ac.in, Mobile: +91-99370-93949, +91-93370-93949 Website: http://www.cutm.ac.in

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### With Thanks & Regards.....

#### Dr. Sangram Keshari Swain

Dean, Examinations (Centurion University, Odisha) Dean, Students' Welfare (Bhubaneswar Campus) Associate Professor, Dept. of CSE (Bhubaneswar Campus) Convener, Disciplinary Committee (Bhubaneswar Campus) Centurion University of Technology & Management, Odisha Email: sangram@cutm.ac.in, sangrambapun@gmail.com Mobile: +91-99370-93949, +91-93370-93949, +91-94374-93949 Website: http://www.cutm.ac.in

Prakash KVD Dean-IIE & HRD Centurion University of Technology and Management Po: Jatni, Dist:Khurda, Odisha Handphone-8895585474/8328964815 Greenworks WSU Training for Centurion Academics Report October 2019.docx 3017K

# Western Sydney University, Australia Visit Report, Outcomes and Plan\_of Action

### **Centurion Team**

- Dr Durga Prasad Padhi
- Dr Satya Prasad Nanda
- Mr Mir Sadat Ali
- Dr Sargr Maitra.
- Dr Sangram Keshari Swain
- Mr Dinkar Jagannath Gaikward
- Mr Sardar Ranjit Singh

### Date :- 28<sup>th</sup> October 2019

Visited Western Sydney University, Parramatta South campus at <u>10.AM</u>. Introduction meeting conducted in the presence of

- a) Dr. Kamali Kanangara, Associate Dean International
- b) Dr. Gary Dennis, Deputy Dean, School of Science and Health
- c) Dr. Athula Ginige, Professor of Information and Technology

• In the introductory conversation, dignitaries of WSU narrated that the university is focused on the precision agriculture social computing, digital knowledge and Eco system etc.

### Delegates of CUTM highlight the following point

• Vocational education of school dropouts, school pass out, undergraduate and postgraduate students. Community training program for up-skilling and re-skilling.

• PPP: Practice- project- production based training pedagogy and its implementation at the grass root level training through community outreach programs.

- Precision agriculture using mobile app (Kalgudi) for updates and advisory, development of paddy, yield predictor, protected cultivation and IOT.
- RPL: Imparting training to one lakh farmers of Odisha.

• Presently Dr. Athula is working with two agronomist of Professor of Jay Shankar Telaganga State University and has shown interest in collaborative work with CUTM in future.

We visited the different science labs of Parramatta South campus; thanks to Drs Kanangara and Dennis. Dr Laurel Jackon, Director PG Education, and Dr. Pheroza Darauwalla kindly showed us the Parramatta City campus - student activity center and other infrastructure. We also visited the Western University's Launch Pad Office (Incubation Center). We had a short conversation with Ms Valentine, who is in charge of the Work Integrated Training program at Western Sydney University. In the afternoon we visited the Sydney Opera House and the Darling Harbour.

### Date 29<sup>th</sup> October 2019

The day started with a training session organised at Hawkesbury campus on protected cultivation. Practical demonstrations of hydroponic cultivation of different crops, crop management and control of environmental parameters in the glass house were given pre and post lunch In case of crop management, commercial hybrids are chosen targeting quality output. Crops are cultivated in rock-wool media and nutrient solution is provided to crop needs. The environmental parameters, temperature, relative humidity, carbon dioxide concentration, solar radiation, air movement etc are managed automatically by a well programmed software.

## Date 30<sup>th</sup> October 2019

The day started with a lesson on the heating system used in the glass house by Mr Philip Jones, General Manager AIS GREENWORKS, who explained the hot water thermal cycle and the use of gas fired boiler system. The second topic of discussion automation technology of PRIVA. The PRIVA is a control system used for controlling

- Temperature
- CO2 level
- Relative humidity
- Light
- Air movement

The hardware components and its functions were explained by Mr Edgar lopez (GREENWORKS). He discussed CPU, cards used, relays and switches used by the control system.

The team visited other small green houses, shade houses and poly-houses used by WSU for research.

The second session started with a presentation by Ms. Saskia Blanch, Business development of AIS GREENWORKS, who showed us seven videos on the operations and management of greenhouses, including media, site selection, greenhouse set up, nutrient management, water management and pest-disease management. She demonstrated to us the products which are commonly used in the greenhouse.

In the next session, Mr. Tony Bundock, Director of Genesis, described the use and operation of the 'Priva System', a software suitable for greenhouse environment. In greenhouse, different environmental parameters like temperature, CO2 concentration, relative humidity, light and air movement are the key variable which can be controlled to create a favourable environment for crops. He described in detail how to manage these variables with the help of software.

### Date 31<sup>st</sup> October 2019

The day was planned for visiting different greenhouses and to meet progressive farmers using protected cultivation

The first visit was to the NFT lettuce farms at South Windsor where we saw farmer is growing different types of lettuce like

- Butter head
- Romaine
- Misticanza
- Leaf types, Ice burg etc

The quality of the crop grown hydroponically was excellent. The various lettuce types were also growing in the field.

Next we visited a tomato farm at Londonderry where the farmer is successfully growing tomatoes in sawdust rooting medium under protected cultivation (Open ventilated condition).

Next farm was floriculture farm at Kemps creek where the farmer is cultivating flowers in soil media under greenhouse conditions, targeting future market.

There is an excellent vegetable farm at Rossmore run by Mr Joe who raised cherry tomatoes and baby cucumbers under protected cultivation

The last visit was to Austral M/S Vellas hydro fresh where farmers demonstrated cultivation of lettuce and herbs under shed net environments.

From the above exposure it became clear that farmers used protected cultivation in a teller make versions as per their needs for different environment conditions.

# Date 1<sup>st</sup> November 2019

The day started with meeting with Dr. Basant Maheshwari, Professor of water, environment & sustainability. He shared his experience of working in India (Gujarat and Rajasthan) in the area of ground water management. Govt. Of India is going to inaugurate the program in the next week as JALDOOT. He has developed a network of water table monitoring team with villagers.

The second meeting was with Associate Prof. Zhong- Hua Chen, Associate Dean International.

He apprised us about the International Partnership in

- a) Undergraduate studies and dual degree program.
- b) Master of research program.
- c) Collaborative research and possibility of co-publishing of papers.
- d) Top up Scholarship methods.
- e) Student exchange program with partner universities.

Next we met with Dr. Sachin Chavan, Post Doc Fellow.

Dr Sachin is carrying out an experiment on the influence of PAR (Photosynthetically active radiation) on productivity and quality of bell pepper under glass house conditions. The experiment revealed that while the smart glass reduces the energy cost involved in greenhouse environment control, it also reduces penetration of PAR, leading to decreased yield. There was no influence of the smart glass and normal glass on quality of bell pepper.

The fourth meeting as with Prof Robert Spooner-hart.

Dr Robert is carrying out experiment of impact of pollination by stingless bees species on yield and quality of strawberry under protected cultivation. He noted that stingless bees species (*Tetragolula hockingsi* and *Tetragolula carbonaria*, native of Queensland and Sydney, respectively) positively influenced the quality and productivity of strawberry.

# Date 2<sup>nd</sup> November 2019

Visited the Blue Mountain and Wildlife Zoo.

# <u>Outcomes and Plan of Actions following the Learning Visit to Western</u> Sydney University of the 7 Members from Centurion University, Odisha.

1. Glass House for Protected Cropping:

- a) Construction and Fabrication (Action: Mir Sadat Ali and Mr. Ranjit Singh in consultation with Dr. Sagar Maitra and Prof. Dinkar Gaikwad)
- b) Crop Management (Action: Dr. Sagar Maitra and Prof. Gaikwad)
- c) Automation (Automated software) (Action: Dr. Sangram K Swain in consultation with Greenworks and Priva software solution)
- d) Site selection, Irrigation, coordination and Project Management (Action:
- Dr. Durga Prasad Padhi and Dr. S. P. Nanda)
- e) Budgetary approximation shall be submitted by 15<sup>th</sup> November 2019
- 2. Student Exchange Program

a) Action @ WSU: Dr. Kamali Knnangara, Asso Dean-International and Dr. Zhong-Hua Chen, Asso Dean-International

b) Action @ CUTM: Dr. Durga Prasad Padhi, Mir Sadat Ali and Dr. S. P. Nanda

3. Project for Ground Water Management

a) Action @ WSU: Dr. Basant Maheswari, Professor - Water, Environment & Sustainability

- b) Action @ CUTM: Dr. Durga Prasad Padhy and Dr. Sagar Maitra
- 4. Project for Precision Package of Practices for different Crops
  - a) Action @ WSU: Dr. Athule Ginige, Professor IT

b) Action @ CUTM: Dr. Sagar Maitra and Prof. Dinkar Gaikwad and Dr. S. P. Nanda

- 5. Commercial Implementation of Protected Cultivation
  - a) Action @ WSU: Ms. Saskia with the help of different progressive farmers
  - b) Action @ CUTM: Whole 7 Member Team
- 6. Collaboration with Greenworks
  - a) Action @ WSU: Mr. Philip, General Manager Greenworks and Ms. Saskia
  - b) Action @ CUTM: Dr. Sangram K Swain and Dr. Sagar Maitra
- 7. Work Integrated Program- Exchange of knowledge and best practices
  - a) Action@WSU: Prof. Valentine and Prof. Feroza Daruwalla
  - b) Action@CUTM: Mir Sadat Ali

We would like to profusely thank the Management for giving us the lifetime opportunity for being part of the Team. Also we would like to share our gratitude to the whole WSU Team involved for caring, supporting and cooperating with us throughout the whole trip. A special mention of Dr. Priti Krishna for her deep caring, sharing and giving attributes for the whole Team of Centurion. The entire training and meetings were put in place by Dr Priti Krishna and we will continue to work with her in various ways.

> Thank You, 7 members of the Team



Bijan Kumar Das <bijan.das@cutm.ac.in>

# Fwd: Our team's visit to Hawkesbury campus

1 message

**PRAKASH KVD** <prakash.kvd@cutm.ac.in> To: Bijan Kumar Das <bijan.das@cutm.ac.in> Thu, Apr 22, 2021 at 10:40 PM

------ Forwarded message ------From: **Dr. Sangram Keshari Swain** <sangram@cutm.ac.in> Date: Thursday, April 22, 2021 Subject: Fwd: Our team's visit to Hawkesbury campus To: PRAKASH KVD <prakash.kvd@cutm.ac.in>

------ Forwarded message ------From: **PRESIDENT @ CUTM** <president@cutm.ac.in> Date: Fri, Aug 30, 2019 at 9:34 AM Subject: Fwd: Our team's visit to Hawkesbury campus To: <durga.padhi@cutm.ac.in>, Durga Prasad Padhi <durgaprasad@cutm.ac.in> Cc: Nagen Kumar Bisoi <nagen@cutm.ac.in>, Sangram Keshari Swain <sangram@cutm.ac.in>, manager admn <manager.cutm@gmail.com>

Dear Durga babu,

Here is the letter of invitation. The dates of visit, as suggested by the President, are 27th September to 6th October. Therefore, please request everyone to immediately apply for visa, with the urgent clause, so you get it at the earliest. I am not forwarding this letter to everyone - with the exception of Prof Sangram Swain - because I may not have all the emails. Please, Durga babu, share the invitation letter with everyone in the team.

Please apply immediately online. Go to this link and apply under "Visitor Visa" subclass 600 - https://immi.homeaffairs.gov.au/visas/getting-a-visa/visa-listing/visitor-600. When you fill in the form, there is an option that says "apply as part of a group". Choose that so the authorities would know that all of you are traveling together. That will help with the speed of processing the visa,

Use the help of Mr Nagen Bisoi in case you get stuck anywhere.

With warmest regards, Swapna



Prof Mukti Mishra, PhD

President, Centurion University of Technology and Management, India Chairman, Gram Tarang India: Centurion University, Office of the President, 17 Forest Park, Bhubaneswar 751009, Odisha. Centurion University of Technology and Management Mail - Fwd: Our team's visit to Hawkesbury campus

Phone: +91 674 2596227 (D), 2596228 (Epbx) | Fax: +91 674 2596229; Mob: +91-9437007777 (M) Australia: +61-476290909 (M)

Website: http://www.cutm.ac.in

#### Blog: http://www.muktikantamishra.blogspot.in/

---->

I was never born and will never die. I'm a concept. Eternal. Infinite. Indestructible.

- Prof Mukti Mishra

----- Forwarded message ------From: Anna Grankina <A.Grankina@westernsydney.edu.au> Date: Fri, Aug 30, 2019 at 6:53 AM Subject: RE: Our team's visit to Hawkesbury campus To: PRESIDENT @ CUTM <president@cutm.ac.in> Cc: Marisa Furno <M.Furno@westernsydney.edu.au>

Dear Swapna,

Please find attached the invitation letter signed by Associate Professor Linda Taylor, Pro Vice-Chancellor, International as requested.

Should you have any questions, please, don't hesitate to contact me.

Kind regards

## Anna Grankina | Administrative Assistant, International Partnerships

Western Sydney International

P: 9685 9750 | Ext: 9750

E: a.grankina@westernsydney.edu.au

westernsydney.edu.au



From: PRESIDENT @ CUTM [mailto:president@cutm.ac.in] Sent: Thursday, 29 August 2019 12:02 PM To: Anna Grankina < A. Grankina@westernsydney.edu.au> Cc: manager admn <manager.cutm@gmail.com> Subject: Re: Our team's visit to Hawkesbury campus

Dear Anna,

We looked at the calendar again and felt that the best time for the visit would be from 27 September to 6th of October. If this is suitable to you as well, let's freeze these dates for the team's visit, in which case we would require the letters of invitation as soon as possible so they could apply for the visa.

Do let me know if there is anything I can do from this end to help.

With warmest regards,

Swapna



#### Prof Mukti Mishra, PhD

President, Centurion University of Technology and Management, India

Chairman, Gram Tarang

India: Centurion University, Office of the President, 17 Forest Park, Bhubaneswar 751009, Odisha.

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Blog: http://www.muktikantamishra.blogspot.in/

I was never born and will never die. I'm a concept. Eternal. Infinite. Indestructible.

- Prof Mukti Mishra

On Wed, Aug 28, 2019 at 12:02 PM PRESIDENT @ CUTM president@cutm.ac.in> wrote:

Dear Anna,

Sincere apologies for the delay in my response. The tour is proposed to be between the end of October and beginning of November.

Hppe tiis helps.

With warmest regards,

Swapna

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### Prof Mukti Mishra, PhD

President, Centurion University of Technology and Management, India

Chairman, Gram Tarang

India: Centurion University, Office of the President, 17 Forest Park, Bhubaneswar 751009, Odisha.

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Website: http://www.cutm.ac.in

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---->

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- Prof Mukti Mishra

On Tue, Aug 27, 2019 at 4:07 AM Anna Grankina <A.Grankina@westernsydney.edu.au> wrote:

Dear Professor Mukti Mishra,

My sincere apology for bothering you but I'm just following up on the dates of your tour. In order to finalise the invitation letter I'd appreciate if you could advise of the dates of your visit to Western Sydney University.

Thank you and kind regards

Anna Grankina | Administrative Assistant, International Partnerships

Western Sydney International

P: 9685 9750 | Ext: 9750

E: a.grankina@westernsydney.edu.au

westernsydney.edu.au



From: PRESIDENT @ CUTM [mailto:president@cutm.ac.in] Sent: Thursday, 22 August 2019 8:01 PM To: Marisa Furno <M.Furno@westernsydney.edu.au>; Anna Grankina <A.Grankina@westernsydney.edu.au> Subject: Fwd: Our team's visit to Hawkesbury campus

Dear Anna,

Here is the passport of Dr Sangram Keshari Swain.

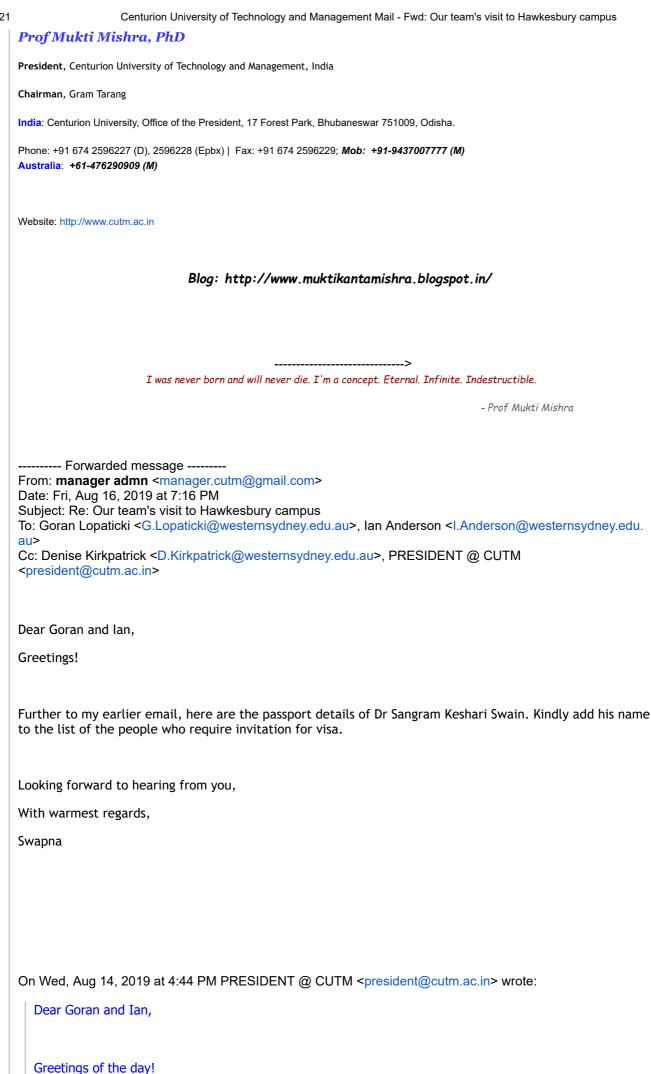
I will revert to you regarding the dates of the tour.

With warmest regards,

Swapna







We have put together the passports of the team members who would be visiting Hawkesbuy Campus. There is one other person in the team, whose passport I will send across tomorrow.

Could you kindly send invitation letters for each of the persons:

- 1. Dr Sagar Maitra
- 2. Mr Durga Padhi
- 3. Dr Mir Sadat Ali
- 4. Mr Ranjit Singh
- 5. Dr SP Nanda
- 6. Mr Dinkar Gaikwad
- 7. Prof Sangram Keshari Swain (his passport I will send later)

Do kindly let me know if you require any further information from my side.

Thanking you,

With warmest regards,

Swapna Harrison

Sr Manager - Administration & EA to the President, Centurion University

M: +91-9776880000, e: manager.admn@cutm.ac.in

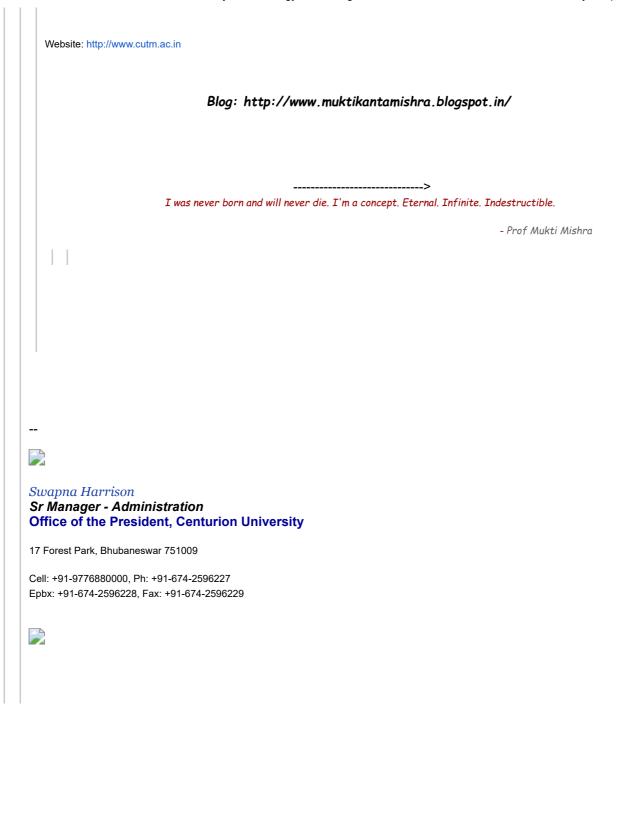
### Prof Mukti Mishra, PhD

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#### With Thanks & Regards.....

#### Dr. Sangram Keshari Swain

Dean, Examinations (Centurion University, Odisha) Dean, Students' Welfare (Bhubaneswar Campus) Associate Professor, Dept. of CSE (Bhubaneswar Campus) Convener, Disciplinary Committee (Bhubaneswar Campus) Centurion University of Technology & Management, Odisha Email: sangram@cutm.ac.in, sangrambapun@gmail.com Mobile: +91-99370-93949, +91-93370-93949, +91-94374-93949 Website: http://www.cutm.ac.in



Prakash KVD Dean-IIE & HRD Centurion University of Technology and Management Po: Jatni, Dist:Khurda, Odisha Handphone-8895585474/8328964815

Invitation Letter for visa application Centurion University\_signed.pdf