गृह मंत्रालय
MINISTRY OF
HOME AFFAIRS

राष्ट्रीय न्यायालयिक विज्ञान विश्वविद्यालय
(राष्ट्रीय महत्त्व का संस्थान, गृह मंत्रालय, भारत सरकार)
National Forensic Sciences University
(An Institution of National Importance under Ministry of Home Affairs, Government of India)

No.NFSU/ADM/Affi_CUTM/2371/2022 **Date: 29/7/2022**

To,
Shri Prashanta Kumar Mohanty
Dean, Academic
Centurion University,
Odisha
Email:prasanta.mohanty@cutm.ac.in

Subject: **Affiliation of Centurion University, Odisha with NFSU - reg.**

Sir,

Greetings from National Forensic Sciences University!

We are pleased to inform you that NFSU has decided to grant affiliation to School of Forensic Science, Centurion University, Odisha, from the Academic Year 2022 – 23 and onwards, for below mentioned programs:

#	Program	Intake
1	B.Sc. – M.Sc. Forensic Science (Integrated)	60
2	M.Sc. Forensic Science	60
3	M.Sc. Cybersecurity	60
4	MA Police and Security Studies	60

The terms and conditions of granting affiliation are as under:

- The Trust is required to sign an MoU with the State or Central Forensic Science Laboratory available in the state of Odisha.
- The laboratories need to be upgraded and equipped as per items listed at Annexure C & D.
- As per the norms, the appointment of Dean, Faculty, Supporting Staff and Administrative Staff is to be strictly in accordance with the NFSU norms in terms of student-faculty ratio, minimum qualification, pay scale, etc and comply with it before the start of Academic Session.

The Centurion University, Odisha shall submit the Compliance Report to the University at the earliest. Once these conditions are fulfilled, Advertisement for Admission can be released. Until all norms are fulfilled by the Centurion University,

affiliation will be treated as provisional. You may inform all stakeholders about provisional affiliation. NFSU will not be liable for any dispute in this regard.

Further as per Section 1.4.2 of NFSU Affiliation Norms, below mentioned prescribed fee is required to be paid by the College/Institute requesting affiliation.

#	Particular	Fees (INR)
1	Affilaition Fee (For 4 UG/PG Program @Rs.3,00,000/- per UG/PG Program) (a) B.Sc. – M.Sc. Forensic Science (b) M.Sc. Forensic Science (c) M.Sc. Cybersecurity (d) MA Police and Security Studies	Rs. 12,00,000/-
2	Security Deposit Fee (@Rs.5,00,000/- per UG/PG Program) (a) B.Sc. – M.Sc. Forensic Science (b) M.Sc. Forensic Science (c) M.Sc. Cybersecurity (d) MA Police and Security Studies	Rs. 20,00,000/-

Bank Details of the National Forensic Sciences University are as under:

Name of the Account	National Forensic Sciences University
Bank name	Punjab National Bank
IFSC Code	PUNB0460100 (Fifth character is "zero")
Bank Account No.	4601000100070443
Branch Address	Jalseva Bhawan Branch, Sector – 10, Gandhinagar, Gujarat

You are requested to deposit Rs. 32,00,000/- towards Affiliation Fee and Security Deposit.

Thanking You,

Executive Registrar
NFSU, Gandhinagar

Copy to:

1. **Campus Director, Gandhinagar (For information)**
2. **Accounts Officer, NFSU**

C.f.w.c to: PA/PS to Hon'ble Vice Chancellor (For information)

List of Lab Equipments/Instruments for Practical (Minor and Major)

1. Forensic Chemistry and Toxicology

Minor Instruments		
S.No.	**Name (Quantity)**	**Justification**
1.	**UV Cabinet (02)**	The UV cabinet is used to detect UV active spots for standard and extracted drugs and pesticides when developed on fluorescent TLC Plate.
2.	**Oven (01)**	Used to heat or dry the samples for toxicological analysis.
3.	**Incubator (01)**	Used to incubate the biological samples for spiked processing at fixed temperatures.
4.	**Vortex Shaker**	Practical/ Dissertation Project/ Research
5.	**Centrifuge**	Practical/ Dissertation Project/ Research
6.	**Microscope**	Practical/ Dissertation Project/ Research
7.	**Water Bath**	Practical/ Dissertation Project/ Research
8.	**Heating Mantle**	Practical/ Dissertation Project/ Research
9.	**Viscometer**	Practical/ Dissertation Project/ Research
10.	**Ph Meter**	Practical/ Dissertation Project/ Research
11.	**Weighing Balance**	Practical/ Dissertation Project/ Research
12.	**Ultrasonicator**	Used for sonication of drugs in a solution. De-gassing of solvents to be introduced in HPLC System

Major Instruments		
S.No.	**Name (Quantity)**	**Justification**
1.	**Water Purification System (01)**	The equipment can be used to produce, Type-I; Type-II and Type-III water. Freshly prepared water can be used to rinse the glassware (Type-III).
2.	**Refrigerated Centrifuge (01)**	The equipment is used for sample preparation in DLLME like extractions to ensure that no drug activity is lost due to high temperature.
3.	**pH Meter (02)**	The assembly contains Conductivity meter, temperature probe and pH meter for generic chemistry experiments of the department. The instrument is also used for sample preparation for HPLC and LC instruments.

National Forensic Sciences University Gandhinagar

4.	**Gas Chromatography-Mass Spectrophotometer (01)**	The equipment is used to analyse volatile poisons/ explosives extracted from Biological and Non-biological matrices.MS detector ensures that samples with no standard available are also analysed by their structure elucidation.
5.	**High Performance Liquid Chromatography**	The equipment is used to analysenon-volatile poisons/ explosives extracted from Biological and Non-biological matrices.
6.	**High Performance Thin Layer Chromatography**	The equipment is used to analysenon-volatile poisons/ explosives extracted from Biological and Non-biological matrices. Analysis can be done on TLC system with automation.
7.	**Liquid Chromatography-Mass Spectrophotometry**	The equipment is used to analysenon-volatile poisons/ explosives extracted from Biological and Non-biological matrices.MS detector ensures that samples with no standard available are also analysed by their structure elucidation.
8.	**Fourier Transform Infra-Red Spectrophotometer**	The equipment is used to analyse non-volatile poisons/ explosives extracted from Biological and Non-biological matrices. IR detector ensures that samples with no standard available are also analysed by their structure elucidation.
9.	**Atomic Absorption Spectrophotometer**	The equipment is used to analysemetallic poisons extracted from Biological and Non-biological matrices.

National Forensic Sciences University
Gandhinagar

2. Forensic Physics and Ballistics

Minor Instruments		
S.No.	**Name (Quantity)**	**Justification**
1.	**Vernier calipers(01)**	Measurement of inside and outside diameter of tools/ grooves in bullets etc.
2.	**Digital balance (01)**	Practical/ Project/ Research
3.	**High Velocity Measuring system (01)**	Practical/ Project/ Research
4.	**GSR Test Kit (01)**	GSR examination of nitrates, nitrites, barium, lead, antimony etc.
5.	**Digital pH meter** **Conductivity meter with TDS**	pH, conductivity of soil samples, TDS in water samples
6.	**Density gradient apparatus**	Density of glass, soil evidences
7.	**Weighing balance with specific gravity apparatus**	For sp.gravity of solids and liquids
8.	**Spherometer**	Radius of curvature of glass
9.	**Refractometer**	For Refractive index of glass
10.	**Densitometer**	For density of solids & liquids
11.	**Soil and water analysis Kit**	TDS of water
12.	**Ammeter**	Practical/ Dissertation Project/ Research
13.	**Voltmeter**	Practical/ Dissertation Project/ Research
14.	**Resistance box**	Practical/ Dissertation Project/ Research
15.	**Rheostat**	Practical/ Dissertation Project/ Research
16.	**Resistances**	Practical/ Dissertation Project/ Research
17.	**Connecting wires**	Practical/ Dissertation Project/ Research
18.	**Capacitors**	Practical/ Dissertation Project/ Research
19.	**Inductor box**	Practical/ Dissertation Project/ Research
20.	**Inductor coils**	Practical/ Dissertation Project/ Research
21.	**Bar magnets**	Practical/ Dissertation Project/ Research
22.	**Iron fillings**	Practical/ Dissertation Project/ Research
23.	**Magnetic compass/needle**	Practical/ Dissertation Project/ Research
24.	**Insulating tapes, Teflon tapes, paraffin tape**	Practical/ Dissertation Project/ Research
25.	**Light bulbs-50 W, 100 W**	Practical/ Dissertation Project/ Research

National Forensic Sciences University
Gandhinagar

26.	**Sulphur lamp**	Practical/ Dissertation Project/ Research
27.	**Mercury lamp**	Practical/ Dissertation Project/ Research
28.	**Magnifying glass**	Practical/ Dissertation Project/ Research
29.	**Spring balance**	Practical/ Dissertation Project/ Research
30.	**Potentiometer**	Practical/ Dissertation Project/ Research
31.	**Battery eliminator**	Practical/ Dissertation Project/ Research
32.	**Screw tester kit**	Practical/ Dissertation Project/ Research
33.	**Centrifuge**	Practical/ Dissertation Project/ Research
34.	**Vacuum oven**	Practical/ Dissertation Project/ Research
35.	**Digital balance**	Practical/ Dissertation Project/ Research
36.	**Spectrometer**	Practical/ Dissertation Project/ Research
37.	**Spirit level**	Practical/ Dissertation Project/ Research
38.	**Searle's apparatus**	Practical/ Dissertation Project/ Research
39.	**(1/10)°C thermometers**	Practical/ Dissertation Project/ Research

Major Instruments		
S.No.	**Name (Quantity)**	**Justification**
1.	**Comparison Microscope with light source (01)**	Microscopic examination of striations rifling marks on bullets, cartridge cases, shells
2.	**Wild Heerbrugg 325400 Electronic Microscope (01)**	Practical/ Dissertation Project/ Research
3.	**Travelling microscope (04)**	Practical/ Dissertation Project/ Research
4.	**Zoom stereo microscope with camera (06)**	Initial exam.of tools, tool marks, paint layers
5.	**UV visible double beam spectrometer (01)**	Prelim. examination of mixture samples
6.	**Compound Microscope (01)**	Microscopic examination of Paint, soil, concrete, cement
6.	**ED-XRF spectrometer (01)**	examination of GSR and characterization of trace elements present in country- made weapon ammunition, characterization of solids, liquids, alloys & ceramic target surfaces
7.	**Handheld XRF gun (01)**	elemental compositions profiling present in firearm residue, propellant and GSR, non-destructive, portable
8.	**Fluorescence Stereomicroscope (01)**	Basic class characteristic of fired bullets, bullet fragments, cartridge/ shot shells and shell cases. the depth dimension of

		lands and groves
9.	**Electrostatic shoe prints/ footprints lifter**	Lifting 2 D prints, skid marks
10.	**Footprints casting kit (01)**	3 D casts of footprints, tire marks, indented tool marks
11.	**Hot plate magnetic stirrer**	For mixing of solvents, sample
12.	**Computerized Speech Lab(01)**	Speaker identification and audio-video examination
13.	**Potentiostat-Galvanostat**	MetrohmAutolab, Modular & Multichannel (AUTM101.S), -10 V to +10 V, 10 nA to 10 mA,

National Forensic Sciences University Gandhinagar

3. Questioned Document and Fingerprints

Minor Instruments		
S.No.	**Name (Quantity)**	**Justification**
1.	**UV box with long & Short wavelength UV (08)**	To observe fluorescence of TLC, paper, security features & ink etc.
2.	**Angle Poise Lamp (08)**	Used as incident / oblique light source to examine large documents under different lighting conditions at an angle.
3.	**Paper Gauge – Dial type (01)**	To measure thickness of paper & security documents.
4.	**Paper Gauge – Digital (01)**	To measure precise thickness of paper & security documents.
5.	**Digital Electronic Balance Citizen CX-220 (01)**	To measure GSM of paper
6.	**Standard Weights (01)**	To Calibrate Digital Electronic Balance
7.	**Nikon Digital Camera 3500F (03)**	To capture various 3D observations during examination of documents & to lift unusual writings from various surfaces. For preparation of demonstrative & juxtapose charts
8.	**Tripod stand (01)**	To support Nikon Digital Camera for stable Document photography
9.	**Hand Magnifiers 100mm/8x (08)**	To examine full signatures, handwriting and various intrinsic marks on documents under magnifications
10.	**Digital pH meter and Hot plates (02)**	To test pH of various chemicals etc.
11.	**Physical Developers** Regular powders: Grey, black, Silver Black Magnetic powders: Black, Grey Fluorescent powders: Red, Green, Pink	To prepare various chemical samples/reagents for practical purpose.
12.	**FP Feather brushes**	To prepare samples of erased & secret writings, to strengthen charred documents & its examination, restore faded writings and also to perform various analysis.
13.	**FP Magnetic brushes**	For fingerprint development
14.	**FP Lifter rolls**	Lifting Tape is a combination of our fingerprint lifting tape and transparent Rubber/GEL lifter sheets, but on a roll. Lifting Tape is specially made to conform to most surfaces like smooth, textured, painted, rough, round, and many others
15.	**Inkless Fingerprint pads**	For research/Practical purposes
16.	**Magnifying glass with light source**	The equipment is used for detection & examine the fingerprint in enlarged view so as to observe different ridge characteristics.
17.	**Iodine crystals**	Helps in development method of fingerprints
18.	**Ninhydrin (in aerosol spray)**	Ideal for latent prints and blood contaminated prints on porous surfaces such as cardboard, paper cartons, currency,

		raw wood, plaster board
19.	**UV Light source**	allows precise images and preliminary identification of the evidence before other analytical methods,

Major Instruments		
S.No.	**Name (Quantity)**	**Justification**
1.	**Stereo Zoom Microscope (01)**	To examine various problems of Forensic Documents viz. Sequence of strokes, handwriting examination, microprinting etc.
2.	**Stereo Zoom Microscope with camera (01)**	To examine various problems of Forensic Documents and to record observation in cases viz. Sequence of strokes, handwriting examination, microprinting etc.
3.	**Hyper Spectral Comparator – VSC 8000 (01)**	This state-of-the-art equipment is used in most of the cases as it has various light sources & combination of filters. It has library of controlled samples of bank notes & passports as ready reference.
4.	**Electrostatic Detection Apparatus, ESDA (01)**	The equipment is used for detection & decipherment of Indentation marks on documents
5.	**UV Visible Spectrophotometer (01)**	The equipment is useful in differentiation of ink and for creation of databank of inks and to determine sequence of strokes using destructive method etc. **Note: Shifted to chemistry department.**
6.	**Forensic Raman Spectrophotometer (01)**	Useful in various elemental examination of Forensic Exhibits viz. various types of inks, paper fibers and other trace elements using non-destructive technique.
7.	**Stereo biological microscope – Olympus LXI 20 (01)**	Useful in examination of Paper Fibers and micro printing & printed documents.
8.	**Stereo biological measuring microscope with Camera LXI 20 (01)**	Useful in examination of Paper Fibers and micro printing & Printed materials. Photographs help to keep records of observations
9.	**Portable Document Analyst (01)**	Small units with UV, IR, Incident light Source with Digital Zoom upto 30 X. Useful for examination of various documents at Crime Scene for scrutiny of documents.
10.	**75inch TV display with stand (01)**	Attached with scientific equipments-portable Document Analyst for further magnification and high-resolution demonstration of various minute details of microscopic examination various security features.
11.	**Latest Computer, Scanner & printer System (01)**	To enhance digital images of various documents useful in study of faded writings of different writing instruments, blurred stamp impressions etc. using non-destructive methods.
12.	**Sharp 5520 B/w Photocopier (01)**	To prepare various samples for practicals, hands-on-exercise. research, dissertation, case work examination, transparencies etc.
13.	**Kyocera Taska Alfa Colour Photocopier 5053 (01)**	To prepare various samples for practicals, hands-on-exercise. research, dissertation purpose.

14.	**LaserJet Printer 500 (01)**	To prepare various samples for practicals, hands-on-exercise. research, dissertation purpose.
15.	**Muffle Furnace (01)**	For preparation of charred documents
16.	**Digital pH meter and Hot plates (02)**	To test pH of various chemicals etc.
17.	**Digital Camera**	Digital camera with macro lens is essential for close range photography of fingerprint capturing details required for everyday use.
18.	**Zoom stereo microscope with CCD Camera**	Optical technique for visualizing enlarged and 3D view of fingerprint so as to determine different ridge characteristics
19.	**Cyanoacrylate Fuming chamber**	Developmental technique for fingerprint Used for development of prints at faster rate with better clarity by controlling high temperature and relative humidity conditions
20.	**Heat chamber for Development with Ninhydrin, DFO, Iodine fuming**	Used for development of prints at faster rate with better clarity by controlling high temperature and relative humidity conditions
21.	**Electrostatic dust fingerprint lifter**	The kit is used for lifting fingerprints using high electrostatic charge.
22.	**Footprint and tyre print casting kit**	Lifting different foot impressions and tyre track marks for identification purpose.
23.	**Latest Computer, Scanner & printer System**	To enhance digital images of various fingerprint impression on various surfaces documents useful in study of faded writings of different writing instruments, blurred stamp impressions etc. using non-destructive methods.
24.	**High resolution live finger scan system**	To produce best possible finger print patterns for conversion into digital templates electronically and to send to AFIS database directly
25.	**High intensity forensic light source kit (polylite)**	It is made up of a powerful lamp containing the ultra-violet, visible and infrared components of light. It filters down the light into individual wavelengths that enhance the visualization of evidence including fluorescence, absorption and oblique lighting.
26.	UV Light source	allows precise images and preliminary identification of the evidence before other analytical methods,
27.	Manual fingerprint taking compact cabinet	For creation of fingerprint slips of convicted/ arrested persons using printers' ink, slab roller method conveniently.
28.	Automated Fingerprint Identification System (AFIS)	Storing and matching of the fingerprints in a software based system
29.	Optical fingerprint camera light source (Forenscope)	Digitized portable technique for capturing fingerprint at the crime scene

National Forensic Sciences University Gandhinagar

4. Forensic Biology

Minor Instruments		
S.No.	Name (Quantity)	Justification
1.	Osteometric board (01)	Practical/ Dissertation Project/ Research
2.	Mandibulometer (01)	Practical/ Dissertation Project/ Research
3.	Attachable goniometer (01)	Practical/ Dissertation Project/ Research
4.	Palatometer (01)	Practical/ Dissertation Project/ Research
5.	Measuring tape (01)	Practical/ Dissertation Project/ Research
6.	Human bones (2 sets)	Practical/ Dissertation Project/ Research
7.	Plate Centrifuges (02)	Practical/ Dissertation Project/ Research
8.	Spreading Calipers	Practical/ Dissertation Project/ Research
9.	Vernier Calipers	Practical/ Dissertation Project/ Research
10.	Mini Centrifuges (02)	Practical/ Dissertation Project/ Research
11.	Microscopes (25)	Practical/ Dissertation Project/ Research
12.	Centrifuges (03)	Practical/ Dissertation Project/ Research
13.	Autoclave (01)	Practical/ Dissertation Project/ Research
14.	Stereo microscope (10)	Practical/ Dissertation Project/ Research
16.	Fume hood	Practical/ Dissertation Project/ Research
17.	Laminar air flow	Practical/ Dissertation Project/ Research
18.	PCR Cabinet	Practical/ Dissertation Project/ Research
19.	Ph Meter	Practical/ Dissertation Project/ Research
20.	Heat block	Practical/ Dissertation Project/ Research
21.	Incubators	Practical/ Dissertation Project/ Research
22.	Hot plate	Practical/ Dissertation Project/ Research
23.	Root spin	Practical/ Dissertation Project/ Research
24.	Vortex	Practical/ Dissertation Project/ Research
25.	Microwave	Practical/ Dissertation Project/ Research
25.	Water Purifier	Practical/ Dissertation Project/ Research

Major Instruments		
S.No.	Name (Quantity)	Justification
1.	RT-PCR	Practical/ Dissertation Project/ Research

2.	**Automatic DNA Extractor**	Practical/ Dissertation Project/ Research
3.	**Genetic Analyzer**	Practical/ Dissertation Project/ Research
4.	**Gel Doc (01)**	Practical/ Dissertation Project/ Research
5.	**Trinocular Microscope (01)**	Practical/ Dissertation Project/ Research
6.	**FISH Microscope (01)**	Practical/ Dissertation Project/ Research
7.	**Thermocycler**	Practical/ Dissertation Project/ Research

National Forensic Sciences University ★ Gandhinagar ★

Enclosure - 04

Cyber Security Lab Requirement

Sr. No.	Item(s)	Type	Qty
	Commercial Hardware/Software		
1	High End Computers (Sample Configurations given below)	Hardware	26*
2	Burpsuite Professional	Software	5 to 10
3	Acunetix	Software	60 (if floating license available) OR 5 to 10
4	IDA Pro	Software	60 (Concurrent Licenses)
5	Nessus Professional	Software	5 to 10
6	Wireless Adapters	Hardware	30
7	Small Firewall (Commercial)	Hardware with Software	5 to 10
8	Oxygen Forensic Suite	Software	5 to 10 (Concurrent connection)
9	FTK	Software	60
10	Raspberry Pi 4B with required sensors	Hardware	30
11	Android and iPhone Mobiles Phones	Hardware	10 to 20
	Free / Open-Source Software		
1	Autopsy	Software	60
2	Kali Linux OS	Software	60
3	Santoku OS	Software	60
4	Jupyter Notebook	Software	60
5	Sysinternals	Software	60
6	Maltego	Software	60
7	Hyperledger	Software	60

** Refers to shortfall of computers in numbers with respect to intake and your current 34 computers in lab.*

Computer Configurations:

Processor	Core i7 10th generation or higher
CPU Cores	8 or more
RAM	16 GB or more
Storage	1TB HDD and 265 GB or more SSD NVMe
GPU	4 GB or more (optional)
OS	Windows 10 or latest professional version

National Forensic Sciences University ★ Gandhinagar ★