

WORLD SKILL CENTER WSCEE 2021



WORLD SKILL CENTER BHUBANESWAR





Contents GLOSSARY......3 ABOUT WSC4 WHAT IS INFORMATION BROCHURE WSCEE 2021?......4 IMPORTANT NOTES FOR APPLICANTS......5 ACADEMIC CALENDAR 5 RESERVATIONS6 HOSTEL FACILITY.......7 ELIGIBILITY CRITERIA.....8 ACADEMIC OUALIFICATION......8 AGE LIMIT......8 WSC STEPWISE ADMISSION PROCESS: 9 I. NOTIFICATION 10 PROCESS OF FILLING-UP THE APPLICATION FORM. 10 ONLINE EXAMINATION- WSCEE 2021 17 RULES FOR ENTRANCE EXAMINATION.......17

6.	COUNSELLING AND ADMISSION	19
[DOCUMENTS TO BE SUBMITTED BY STUDENTS DURING REPORTING FOI	R 20
7.	COMMENCEMENT OF CLASSES	20
FR	EQUENTLY ASKED QUESTIONS	20
AF	PPENDICES	21
A	APPENDIX-I: SYLLABUS- BASIC ELECTRONICS	21
A	APPENDIX-II: SYLLABUS- BASIC MECHANICAL	22
A	APPENDIX-III: SYLLABUS- BASIC ELECTRICAL	23
A	APPENDIX-IV: SYLLABUS- GENERAL CALCULATION & SCIENCE	24
A	APPENDIX-V	26
FC	ORM I	26
FC	ORM II	26
FC	ORM III	27
FC	ORM IV	28
Α[DDRESS FOR COMMUNICATION	28

GLOSSARY

WSC	World Skill Center
ITE	Institute of Technical Education
ITI	Industrial Training Institute
WSCEE	World Skill Center Entrance Examination
SC	Scheduled Castes
ST	Scheduled Tribes
PwD	Persons with Disability
AITT	All India Trade Tests
HSC	High School Certificate
BSE	Board of Secondary Education
B.TECH	Bachelor in Technology
M.TECH	Master of Technology

ABOUT WSC

World Skill Centre (WSC) was inaugurated by Hon'ble Chief Minister of Odisha on **5th March 2021**. WSC is India's one-of-its-kind premier institute to impart advanced skills and create globally employable youth.



The country's first World Skill Centre (WSC) is a newly constructed 18-storey building in Bhubaneswar. Unlike anything in India so far, WSC will be a major milestone in establishing 'Skilled-in-Odisha' as a global brand. A state-of-the-art facility spanning half a million square feet, WSC will offer advanced skill training in manufacturing and services sector to begin with. WSC is well equipped with laboratories and advanced machinery. The curriculum of WSC courses have been adopted from ITE Singapore.

Initially 240 students will be enrolled in the center for the first year. Students who have completed Diploma or 02 years of ITI in Engineering/ Technology are eligible to get admission to WSC. However, they have to appear for an entrance test to join these advanced courses.

WSC being a finishing school, will create industry ready professionals and promote the 'Skilled-in-Odisha' brand.

What is INFORMATION BROCHURE WSCEE 2021?

The Information Brochure-WSCEE 2021 is a complete document containing all the details related to the examination, admission, student reservation, intake capacity, Courses, fee structure, eligibility etc. for admission into WSC. WSCEE stands for **World Skill Center Entrance Examination**.

The students are advised to go through this brochure for any information regarding the admission procedure.

IMPORTANT DATELINES

SI.	Event	Date (Tentative)	Day
1	Notification in Website/Newspaper	27-Jul-21	Tuesday
2	Start of Online Application	27-Jul-21	Tuesday
3	Last date of Online Application	14-Aug-21	Saturday
4	Admit Card Download Start date	29-Aug-21	Sunday
5	Date of Online Entrance Exam	01-Sept-21	Wednesday
6	Declaration of result	09-Sept-21	Thursday
7	Start of counselling & admission process	13-Sept-21	Monday

Note: However the above datelines may change as per the COVID situation & Govt. guidelines from time to time. The same will be communicated through the WSC website. WSC also may change the above mentioned datelines in case of any exigency arising due to any unavoidable circumstances.

IMPORTANT NOTES FOR APPLICANTS

Availability of Seats in Various Courses

For the academic session 2021-22, WSC will enroll students for the following courses. These are regular courses.

Course Name	<u>Course</u> <u>Duration</u>	No of Seats
Facility Technology- Air Conditioning & Refrigeration	1 Year	80
Facility Technology- Mechanical & Electrical Services	1 Year	80
Mechatronics	1 Year	80

Certification

All the courses will be certified by World Skill Centre.

Academic Calendar

The classes for the first batch for WSC will tentatively start in the month of September, 2021. However, the exact date for the commencement of class depends upon COVID situation and the

guidelines issued by Govt. of Odisha from time to time. The duration of each of the course is **52** weeks. The course is divided into 2 semesters as follows.

Semester 1	<u>l</u>	Semester 2		
Week 1 to Week 24	ek 24 Week 25 Week 26 to 51		Week 52	
Mon – Sat (6 Days) Two Saturday School Break		Mon – Sat (6 Days) Two Saturday School Break	Vacation	
8 Hours/Day 1 Hour Lunch Break	Vacation Break	8 Hours/Day 1 Hour Lunch	Break	
1 110ul Lulieli Bleak		Break		

• The Govt. Of Odisha Calendar will be followed for all the Students & Staff of WSC

MODE OF INTAKE

- The selection of students for admission into various courses at WSC will be based on a Common Entrance Test named as WSC Entrance Examination (WSCEE).
- WSCEE 2021 will be an ONLINE Center Based examination.
- Candidates desirous of taking admission in the courses will have to apply for WSCEE –2021 through "Online" mode only. Candidates are advised to carefully go through this Information Brochure. The Information Brochure contains all the important information relating to WSCEE 2021 including instructions for filling online application, important dates and notes for applicants, categories and reservations, eligibility criteria, subjects, syllabus, hostel facility etc.
- The qualifying candidates will be called for a Physical counselling session for exercising their
 option for admission into a particular course after visiting the facilities and discussing with our
 counsellors/trainers.

Reservations

Categories of reservation and their percentage are mentioned below.

- Scheduled Castes (SC)- 15%
- Scheduled Tribes (ST)- 23%
- Persons with Disabilities (PwD)- 4% (Horizontal reservation across the Category)
- Women- **30%** (Horizontal reservation across the Category)
- Toppers/Winners of Odisha skills/India skills/ AITT competition -5 % (Horizontal reservation across the Category)

Note:

- 1. After the completion of 1st round of counselling if seats lie vacant in the reserved categories then they will be merged with the open category seats.
- 2. Persons with more than 40% of any disability as certified by a competent Certifying Authority appointed under Section 57(1) of "Rights of Persons with Disabilities Act, 2016" irrespective of nature of disability, shall be eligible for reservation.
- 3. All reservations are applicable to natives of Odisha State only and they must produce nativity/ Residence Certificate in **Form I** from Odisha State during document verification.
- 4. Students applying for SC/ST reserved category shall furnish SC/ST certificate from the Tahasildar of the place of birth in Odisha at the time of document verification in the **Form** II given in the brochure.

Fee Structure

- The course fee for 12 months advance course certificate is INR **20,000** only.
- The amount will be paid by the students in two instalments (**INR 10,000** at the time of admission and remaining **INR 10,000** before commencement of 2nd semester)
- The payment shall be made in shape of demand draft favoring "World Skill Center" payable at Bhubaneswar.

<u>S1</u> <u>No</u>	Course Name	Course Duration	Course Fees	<u>Hostel</u> <u>Fees</u>	Mess Fees
1	FT- Air Conditioning & Refrigeration	1 Yr	Rs. 20, 000	NIL	NIL
2	FT- Mechanical & Electrical Services	1 Yr	Rs 20, 000	NIL	NIL
3	Mechatronics	1 Yr	Rs 20, 000	NIL	NIL

Student Uniform

- 1. The student will have to pay a sum of **Rs.7500/-** as uniform fees at the time of admission but WSC shall reimburse the same amount to the bank account of the student upon submission of the Original Invoice to the Office.
- 2. Students will be provided with 2 sets of WSC Uniform, worth **Rs.7500/-** which includes the following:
 - a) 02 Nos. of Formal Shirts
 - b) 02 Pairs of Formal Trousers
 - c) 01 Outer coat
 - d) 01 Casual T-shirt
 - e) 01 pair of training shoes

Hostel Facility

Separate hostels for Boys and Girls are available having capacity of 200 Boys and 100 Girls respectively.

 Additional Fees of Rs. 12000/- per year as boarding charge and Rs. 4500/- per month as mess charge will be applicable.

Note - However, WSC shall bear full cost of boarding and mess charges for the students in the commencement year

• The hostel facility is compulsory for all the students i.e students are not allowed to stay outside. The students have to follow the Rules & regulations of the hostel.

ELIGIBILITY CRITERIA

Academic Qualification

A Student who has completed 02 years of ITI or Diploma in Engineering/Technology is eligible.

Age Limit

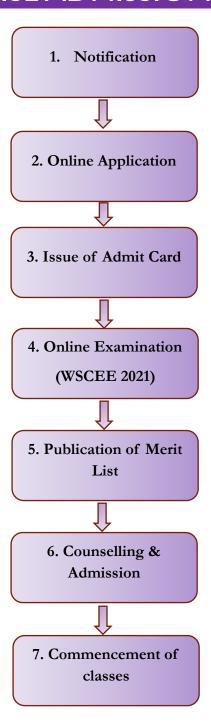
The upper age limit for applying to different courses is 25 Yrs. as on 01.01.2021.

Domicile Criteria

- For this year, only students having permanent residence in Odisha are eligible.
- A student will be treated as permanent resident of Odisha if he/ she satisfies at least one of the following criteria.
 - a. The Candidate must have passed H.S.C/ 10th examination declared equivalent by BSE, Odisha from any of the recognized institution in the State.
 - b. Parents of the candidate must be permanent residents of Odisha. To claim benefit under this class, candidate shall furnish a permanent resident certificate from a Revenue Officer not below the Rank of Addl. Tahasildar of the area where his/her parents have permanent residence in **Form I**.
 - c. Sons/ daughters/ spouse of the permanent employees of the Government of Odisha/ Government of India/Government of Odisha undertakings/ Government of India undertaking serving in the State of Odisha at the time of application are also included under the category. To claim this benefit under this S-Domicile, candidate has to submit a certificate from the Employer of his/her parents/spouse in the prescribed form in Form-III.
 - **d.** The reservation facility will be made available to the children / wards of All India Civil Service Officers serving in the State at par with the natives of Odisha except the reservations being extended to ST and SC categories so far as admission to Professional / Technical Institutions in the State is concerned.

N.B: The children/ ward of all India Civil Service Officers serving in the State can avail the reservation in all categories except ST&SC.

WSC STEPWISE ADMISSION PROCESS:



NOTIFICATION

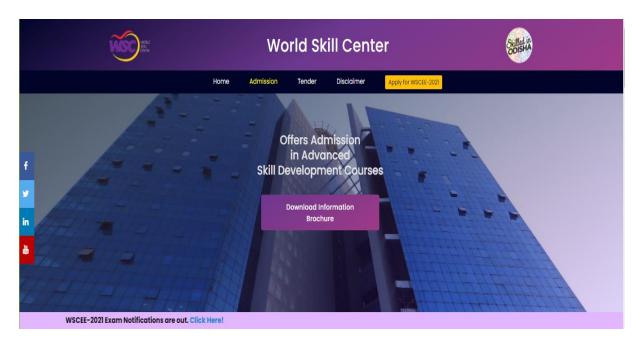
The notification is available in WSC website www.worldskillcenter.org/admissions

2. PROCESS OF FILLING-UP THE APPLICATION FORM

- 1. The students must have a valid mail ID for filling the application form.
- 2. All the future communications with the student will be made to this mail ID.
- 3. Facility of submission of application form will be ceased at 6:00 PM on the last day of filling up online-application form submission. Hence, in order to avoid last minute rush, candidates are advised to complete the process well before the deadline.
- 4. Any dispute arising out of WSCEE 2021 shall only be settled and decided under the jurisdiction of Hon'ble High court of Odisha.
- 5. The students are required to apply only ONLINE as per the procedure detailed below.

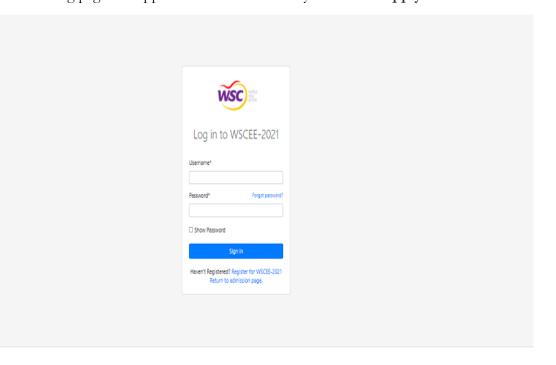
Stepwise procedure to fill the Online Application Form

Step 1: Copy the link- <u>www.worldskillcenter.org/admissions</u> and paste it in your browser or you can visit directly visit WSC website <u>www.worldskillcenter.org</u> and click on 'Admission' Tab. The following page will open and appear on your screen.

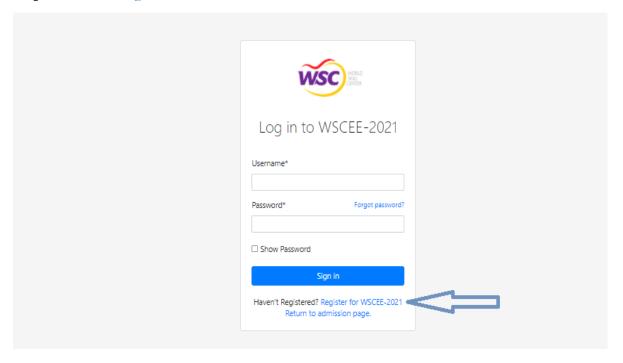


Step 2: Click on the tab- Apply for WSCEE-2021

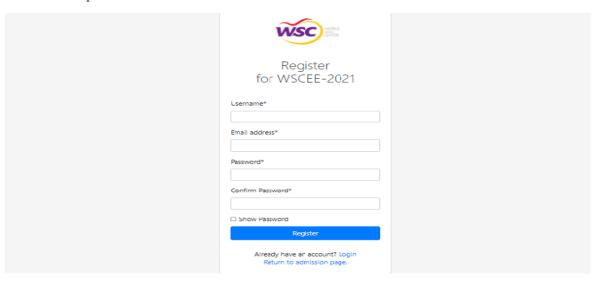
Step 3: The following page will appear on the screen once you click on Apply for WSCEE-2021



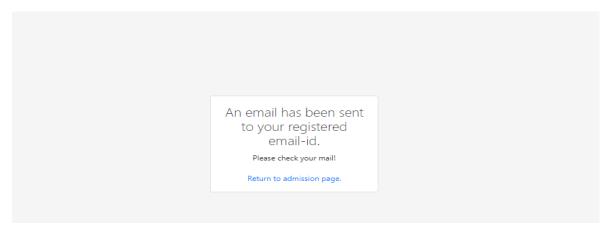
Step 4: Click on Register for WSCEE-2021 as shown below.



Step 5: The following page will appear on the screen. Enter your Username, Mail ID & Password, Confirm the password.



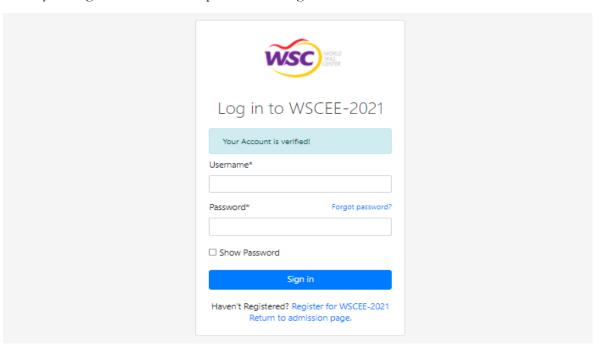
Step 6: Click on the Register tab and the following message will appear on the screen.



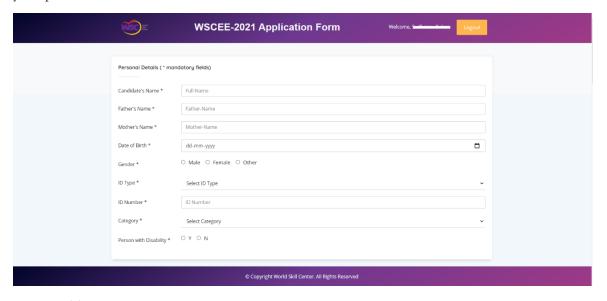
Step 7: Login to your mail ID. You will get a link the verification link as shown below. Click on the verification Link to complete the registration process.



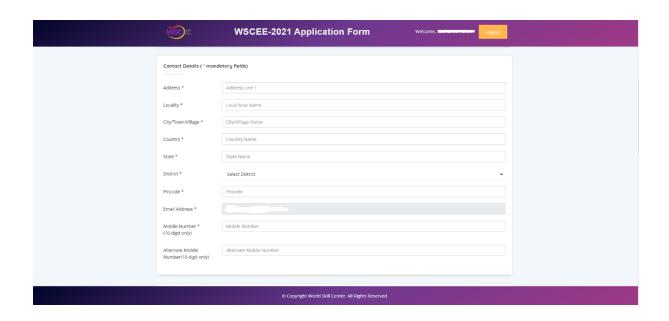
Step 8: Once you click on the verification link the following message will appear on the screen. Enter your registered mail ID & password to login.



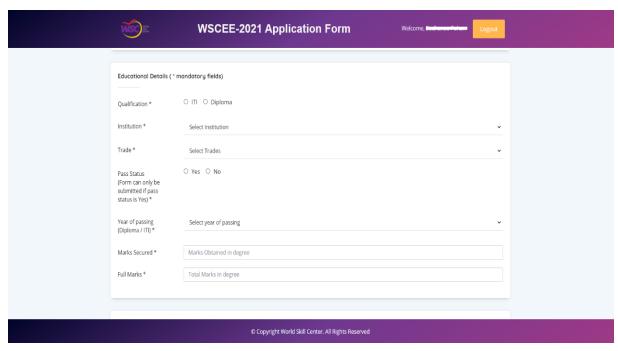
Step 9: After successful registration a page will open as shown below in which you have to fill all your personal details.



Step 10: The same page will have a section named as "Contact details" in which you have to fill your permanent address along with mobile number. Fill up your permanent mobile number as all correspondence from WSC will be done through that number only. Its desirable to provide an alternate number for better outreach.



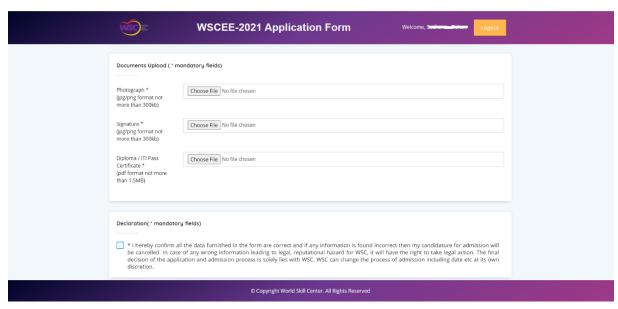
Step 11: In Educational Details section, please fill your educational details (ITI/Diploma) along with mark details correctly as mentioned in your final certificate.



Step 12: In "Preference" section give your choices for different courses that WSC is offering in 2021-22 session. At the time of counselling, you will be allotted seats as per your choice mentioned in application form. Also provide preference for examination center as per your convenience.

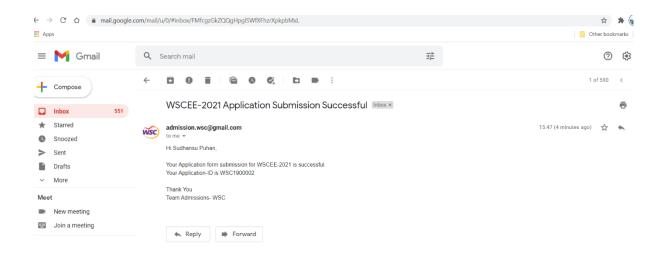


Step 13: Upload documents in correct format and size as per direction. Then check the box in "Declaration" part and 'Submit' the application.



Step 14: After successful submission, the following page will open confirming application status and Application ID. The same message will also be sent to your registered mail ID.





Note:

- 1. No application fee will be charged from the students.
- 2. The application process is entirely ONLINE. No offline application submission is required by the student

Choice of Examination Centre

- The list of cities, where the WSCEE 2021 will be conducted, is given in below table. While applying, students must select districts in order of their preference.
- Efforts will be made to allot the preferred examination centers to the students as per the choice opted by them in their application form. However, in case of unavailability, a different district of nearby area may be allotted.
- The decision of the WSC regarding allotment of Centre shall be final.
- No further correspondence or request shall be entertained in such case.

S1	Name of	Sl	Name of	S1	Name of	S1	Name of	
No	District	No	District	No	District	No.	District	
1	Angul	9	Dhenkanal	17	Kendrapara	25	Nuapada	
2	Balangir	10	Gajapati	18	Kendujhar	26	Puri	
	Dalangn	10	Сајаран	10	(Keonjhar)	20	Pull	
3	Balasore	11	Ganjam	19	Khordha	27	Rayagada	
4	Bargarh	12	Jagatsinghapur	20	Koraput	28	Sambalpur	
5	Bhadrak	13	Jajpur	21	Malkangiri	29	Sonepur	
6	Boudh	14	Jharsuguda	22	Mayurbhanj	30	Sundargarh	
7	Cuttack	15	Kalahandi	23	Nabarangpur			
8	Deogarh	16	Kandhamal	24	Nayagarh			

3. DOWNLOAD OF ADMIT CARD

- Students can download their admit card from the WSC website www.worldskillcenter.org/admissions
- 2. Students has to bring two Photo Copies of Admit card & an Original ID Proof to appear the ONLINE Written examination.
 - If the student fails to take printout of Admit Card from the WSCEE 2021 website for the examination, then he/ she must contact WSC office immediately.
 - If the student finds discrepancy in any information printed on the admit Card, he/she has to contact on the Toll-Free Number 18002666002 immediately.
 - Both the downloaded copies of the admit cards should be signed by the invigilator during examination. One copy must be submitted at the examination hall and the other should be retained by the student. The submitted admit card may be examined at a later stage to validate the authenticity.
 - The student has to keep the admit Card duly signed by the invigilator till he/ she takes final admission in WSC.

4. ONLINE EXAMINATION- WSCEE 2021

WSCEE-2021 will be conducted for admission into all the three courses on **01**st **September, 2021**. This will be a center based online examination. The exam may be conducted in multiple shifts depending on the number of applications received. The schedule and the venue of the examination will be mentioned in the Admit Card.

Rules for Entrance Examination

- i. The Entrance Examination will be held as per the tentative schedule mentioned.
- ii. The medium of examination is English.
- iii. The examination hall shall be opened to the candidates one hour before the commencement of the examination. No candidates will be allowed to enter into the examination hall without two valid downloaded admit cards & original identity card as mentioned in online application form. The downloaded admit card should be endorsed by the Invigilator of the examination center.
- iv. Candidates are required to take their respective seats at least 15 minutes before the commencement of the examination, strictly according to the sitting chart notified earlier by the Centre Superintendent.
- v. In no case, a candidate is allowed to enter the examination hall after the examination starts.
- vi. Attendance will be taken by the invigilators on the attendance sheets in which the candidates shall have to put their full signature against their corresponding roll numbers.

- vii. No candidate will be allowed to leave the hall before the time duration of the examination is over, except for emergency requirements. Ordinarily, no candidate is allowed to leave the hall temporarily during the examination.
- viii. Candidates suffering from any disease and their subsequent presence in the examination, if becomes undesirable in the interest of other candidates, then he/she will not ordinarily be allowed to enter the examination hall. Also, the candidates are not allowed to have a substitute scribe.
- ix. Books, printed papers (other than their Admit Cards), Manuscripts or electronic gadgets such as mobile phones, cell phones and electronic diary, calculators etc, must not be taken into the examination hall. In case these prohibited materials are found, the candidate will be debarred from appearing the examination and asked to leave the Hall.
- x. Candidates are not permitted to talk to each other in the examination hall. No one should receive any help from or assist another in any manner. Malpractice of any form detected during or after the examination would result not only in cancellation of the candidature but also it is liable to more severe punishment as deemed fit by the WSCEE committee.
- xi. A candidate willing to say anything should stand up in his/her seat and remain standing until the invigilator attends to him/her. He/she should on no account leave the seat or make any noise to draw the invigilator's attention.
- xii. The Centre Superintendent is empowered to take necessary decisions on any other matter, which may not be provided in these rules.
- xiii. Please follow government COVID protocol and follow COVID appropriate behavior all the time.
- xiv. Students without masks are not allowed to enter the examination center premises.

Examination Pattern & Guidelines

- The entrance test will consist of both theory & practical based questions on the following 04 sections
 - a) Basic Electrical
 - b) Basic Electronics
 - c) Basic Mechanical
 - d) General Calculation & Science
- There will be multiple choice type questions.
- Each question shall have **04 (four)** answers with **01 (one)** correct answer and the examinee shall have to select the appropriate choice of answer in the assigned computer.
- Each correct answer shall fetch **02 (Two) marks**. Each attempted question will fetch zero.
- There is no negative marking for wrong answer.
- WSCEE-2021 will be a MCQ based examination with equal weightage to all the 04 sections.

Total Questions	120 (30 from each section)
Duration	150 Mins
Total marks	200

Merit list will be prepared on the basis of marks obtained by the student out of total marks
i.e. 200. Even if a student scores more than 200 marks, the total mark obtained by the
student will be treated as 200.

5. PUBLICATION OF MERIT LIST

- A Common merit list will be prepared for both ITI/Diploma students. However, to ensure
 equity in the selection process normalization of marks may be done for ITI & Diploma
 Students if necessary.
- In case of **Tie breaker** in marks, candidates with higher age will be given preference.
- Students can see their results by visiting <u>www.worldskillcenter.org/Results</u>
- Separate merit list for reservation category will be published.
- The decision taken by WSC regarding publication of merit list will be treated as final.

6. COUNSELLING AND ADMISSION

- 1. The admission process may consist of multiple rounds of counselling, until all the seats are filled.
- 2. The selected students will be called to WSC for a counselling session to exercise their option for choosing any particular course.
- 3. The student once admitted into a particular course after counselling is not allowed to change his/her course under any circumstances.
- 4. The admission will also be done on the same date after the Counselling is over.
- 5. Claim for admission will be rejected if the student cannot submit the original certificates, mark sheets, other necessary documents at the time of document verification or if one has filled the form incorrectly.
- 6. Admissions may be cancelled at any time, if certificate/ mark sheets/ other documents are found to be forged or manipulated. A candidate will not be considered for admission if he/ she fails to substantiate the claim with respect to reservation, category, nativity, date of birth, qualification etc.
- 7. All the documents of the student will be matched with the details as submitted during the online application form.
- 8. Students shall report at WSC with the following documents.

Documents to be submitted by students during reporting for counselling & admission

- Pass certificate of High School Certificate (HSC) examination awarded by BSE, Odisha /10th standard examination certificate declared equivalent by BSE, Odisha in support of qualifying examination.
- 2. Class XII pass Certificate & Mark sheet (if any)
- 3. ITI Pass/ Diploma pass certificate & mark sheets of all the semesters/ years
- 4. Valid ID Proof submitted during filling ONLINE application Form
- 5. Odisha Domicile Certificate/Residence Certificate (Form I)
- 6. Original ST/SC/Category certificate by birth (Form II)
- 7. Physically challenged candidates certificate for PwD candidates (Persons with more than 40% of any disability as certified by a competent Certifying Authority)
- 8. Candidates claiming reservation Toppers/Winners of AITT/India Skills/Odisha Skills Competition must submit the relevant certificate mentioning the above
- 9. Student Undertaking form for not pursuing any other part time of full time course during his/her tenure at WSC

N.B:

- All reservations are applicable to natives of Odisha State only and they must produce nativity/ Residence Certificate in Form I from Odisha State during document verification.
- Students applying for SC/ST reserved category shall furnish SC/ST certificate from the Tahasildar of the place of birth in Odisha at the time of document verification in the **Form II** given in the brochure.

7. COMMENCEMENT OF CLASSES

The tentative date for the commencement of classes is in the month of September, 2021. However, the exact date of commencement of class depends upon COVID situation and the guidelines issued by Govt. of Odisha from time to time.

FREQUENTLY ASKED QUESTIONS

- 1) Where should I apply and where do I get all the details of the admission. Ans: Please log on to www.worldskillcenter.org/admissions
- 2) Is there any application fee? Ans- No
- 3) What is the course fee for the courses?
 Ans- 20,000/- (To be paid in two instalments, 10,000/- each semester)
- 4) What is the Hostel and Mess fee? Ans- It's completely free.

5) I am an ITI/Diploma pass out student and my final semester result is yet to be published. Am I eligible for this course?

Ans- No

- 6) Can a student with higher qualification (B.Tech/M.Tech) join these courses?

 Ans- Yes. But he/she must have passed 2 years ITI/3 years Diploma course with maximum age limit of 25 years as on 01.01.2021.
- 7) Students from which branches/trades of Diploma/ITI are eligible to apply? Ans- All Branches/Trades are eligible.
- 8) Can I join internship at WSC after completion of one-year course? Ans- No
- 9) Is there any provision to edit the form after final submission?

 Ans- No. For any queries please contact to the numbers given in the website.
- 10) How can I download the Admit Card?
 Ans- Visit the WSC Admission page at www.worldskillcenter.org/admissions
 Then click on the button 'Download Admit Card'
- 11) Will the classes be conducted online or at the campus in physical mode? Ans- At the campus but subject to covid-19 guidelines.
- 12) How will WSC assist in placement? Ans- WSC shall equip trainees with the requisite skills for placement in Nationally and Globally reputed companies. Placement assistance will be provided to successful trainees.
- 13) Do I need to send printed copy of online application form? Ans- No
- 14) Is there any provision of scholarship at WSC?

 Ans- No. However, WSC shall bear full cost of boarding and mess charges for the students in the commencement year.
- 15) I am a working professional. Can I join these courses in distance mode? Ans-No
- 16) Is there any age relaxation for reserved candidates? Ans-No

APPENDICES

Appendix-I: Syllabus- Basic Electronics

Semiconductors -Classification of material according to electrical conductivity (Conductor, Semiconductor & Insulator) with respect to energy band diagram. Basics of Semiconductor and types.

Basics of Signals-Analog signal -Mathematical representation of Analog signal in Time and Phasor Domain. Terms associated with analog signal (Average value, RMS value, Peak value, Form Factor and Ripple Factor). Digital Signal-Time domain representation of digital Signal

Analog Electronics

Electrical Components: Basics of Resistance, Inductance and Capacitance. Functions of filters and working of RC filter.

Diode: Principle of working of PN junction diode, Zener diode, Light Emitting Diode (LED) and Photo Diode.

Application of Diodes: Principle of working of different types of Rectifiers with their merits and demerits. Construction and working of Clipper and Clamper Circuit. Construction of Voltage Regulator using Zener Diode and 78xx series ICs

Transistor: Different types of Transistor Configuration and state output and input current gain relationship in CE, CB and CC configuration. Need of biasing and explain different types of biasing with circuit diagram. (Only CE configuration). Electronic Oscillator and its working. Classification of Oscillators with simple Block Diagram & mathematical equations.

Field Effect Transistor: Working Principle of FET, JFET and MOSFET.

Digital Electronics

Number System: Binary, Decimal, Octal and Hexa decimal number system. Addition, Subtraction, Multiplication and Division operation using Binary number system.

Logic Gates with truth tables: Study of different logic gates with symbol and truth table. Solving Boolean expressions using logic operators.

Combinational Circuits: Study of logical expression and truth table of Adder, Subtractor, Multiplexer, Demultiplexer, Comparator, Encoder and Decoder Circuits.

Sequential Circuits: Study of truth table and logic expressions of RS Flipflop, JK Flipflop, T Flipflop and D Flipflop. Construction and working of Synchronous and Asynchronous Up-Down Counters. Shift Registers and types.

Miscellaneous

555 Timer-Construction and Working of 555 timers. Different applications of 555 timers.

CRO- Construction and working of CRO. Measurement of different parameters using CRO.

Sensors and Transducers- Concept of Transducer and sensor with their differences. Different type of Transducers. Working principle of Photo emissive, Photoconductive, Photovoltaic transducer and its application. Temperature Sensor-Working of RTD, Thermocouple, Thermistor. Types of Proximity Sensors (Inductive, Capacitive, Infrared sensor). Working of Strain Gauge and LVDT.

Appendix-II: Syllabus- Basic Mechanical

Engineering materials: Ferrous and Non-Ferrous materials and its properties, its uses, Alloys, classification of alloys and its uses

Engineering Workshop: Measuring instruments, measuring tools, marking tools, cutting tools, handling Tools, Fitting tools, Hand tools, carpentry tools, Types of files, vices, clamping tools

Welding: Welding description, Principle, Method of operating, Brazing, and soldering, Welding transformer, Welding generators, Welding hand tools, Welding equipment, Carbon dioxide welding, Gas welding, Arc welding, Safety precautions

Drilling: Drill, Drilling angle, Cutting speed, feed and r.p.m, drill holding devices, Counter sinking, Reamers, Different type, gang and multiple drilling machine

Turning: Safety precaution, Lathe main parts, Feeding & thread cutting mechanism, Nomenclature of single point cutting tools and multi point cutting tools, Lathe cutting speed and feed, Different Lathe operation, Screw thread, Principle of cutting screw thread in centre lathe

Grinding: Grinding wheel material Abrasive, grade structures, bond, specification, use, mounting and dressing, Selection of grinding wheels, Bench grinder parts and use

Interchangeability: Definition, types of limits, terminology of limits and fits

Engineering Mechanics: Introduction, Laws of force, Friction, Centre of Gravity, Moment of inertia, Laws of motion

Engineering Thermodynamics: Basic introduction, Thermodynamic system, Perfect gas laws

IC engines: Introduction of 2 stroke and 4 stroke engine, Engine parts and its function

Theory of Machines: Gear and Gear train, Belts and pulleys, Drives

Automobile: Main components and its structure, antilock braking system (ABS), Gear Box, transmission system

Strength of materials: Simple Stress, strain, Hook's law, elastic limit

Appendix-III: Syllabus- Basic Electrical

FUNDAMENTALS: Concept of current flow, Concept of source and load, concept of battery and cell, Ohm's law and concept of resistance, Relation of V, I & R in series circuit, Relation of V, I & R in parallel circuit, Division of current in parallel circuit, Effect of power in series & parallel circuit, Star – Delta Transformation & Delta – Star transformation. State and explain Kirchhoff's Law, Solve simple problems on Kirchhoff's law, State and explain Faraday's laws of electromagnetic induction, Flemings Left hand rule, and Right hand rule.

MAGNETIC CIRCUITS: Electricity and magnetism, magnetic materials & B-H Curves, permeability, reluctance.

A.C. THEORY: Difference between D.C. & A.C. Amplitude, instantaneous value, cycle, time period, frequency, phase angle, phase difference. AC through pure resistance inductance & capacitance, Explain AC though RL, RC, RLC series circuits. Explain impedance triangle and power triangle, balanced and unbalanced loads in 3 phase star system and measure the power of 3 phase loads, solenoid and its polarity for the given direction of current.

ELECTRICAL MACHINES: Main parts of DC machines, operation of DC generator, Classification of DC generators, EMF equation of generator, operation of DC motor. load performance of a different type of DC generator on load. Motor equation and Simple problem on relation of load current, armature current and field current, troubleshooting & servicing of DC machines, uses of different types of DC generators & motors, necessity of different types of starter, operation of single phase series motor, repulsion motors, induction motors, types and uses of single phase induction motors, poly phase circuit, main parts of 3-phase induction motors, operation of 3-phase induction motors, types sand uses of 3-phase induction motors, operation

of alternators, parallel operation of alternator, operation of single phase transformer, connection for 3-phase transformer, parallel operation of transformer

WIRING AND ELECTRICAL INSTALLATION: Types of wiring, Layout of household electrical wiring (single line diagram showing all the important component in the system, earthing, protective devices (fuse, MCB, ELCB) used in house hold wiring, relays, circuit breaker, calculation of energy consumed in a small electrical installation., transmission line (HT/LT), concept of cable, overhead and domestic service line

MEASURING INSTRUMENTS: Torques in instruments, PMMC type of instruments (Ammeter & Voltmeter), MI type of instruments (Ammeter & Voltmeter), A.C/ D.C Ammeter, voltmeter, energy meter and wattmeter, multimeter

Appendix-IV: Syllabus- General Calculation & Science

Unit, Fractions: Classification of Unit System, Fundamental and Derived Units F.P.S, C.G.S, M.K.S and SI Units, Measurement Units and Conversion, Factors, HCF, LCM and Problems Fractions – Addition, Subtraction, Multiplication and Division, Decimal Fractions - Addition, Subtraction, Multiplication and Division

Square Root: Ratio and Proportions, Percentage:

Square and Square Root, Application of Pythagoras Theorem , Ratio and Proportions, Direct and Indirect proportion , Percentage , Changing percentage to decimal

Material Science: Types of metals, Physical and Mechanical Properties of metal, Types of ferrous and non-ferrous metals, Introduction of iron and cast iron, Difference between iron and steel, alloy steel and carbon steel, Properties and uses of rubber, timber and insulating materials

Mass, Weight, Volume, and Density: Mass, volume, density, weight & specific gravity, Related problems for mass, volume, density, weight & specific gravity

Speed and Velocity, Work Power and Energy: Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation

Mensuration: Area and perimeter of square, rectangle, and parallelogram, Area and Perimeter of Triangle, Area and Perimeter of Circle, Semi-circle, circular ring, sector of circle and hexagon

Trigonometry: Measurement of Angle, Trigonometrical Ratios, Trigonometric Table , Trigonometry-Application in calculating height and distance

Friction: Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, Friction – Lubrication, Co-efficient of friction, application and effects of friction in workshop practice

Profit and Loss: Simple problems on profit & loss, Simple and compound interest

Estimation and Costing: Simple estimation of the requirement of material etc., as applicable to the trade, Problems on estimation and costing

Heat & Temperature and Pressure Concept of heat and temperature, effects of heat, difference between heat and temperature, Scales of temperature, Celsius, Fahrenheit, Kelvin and

Conversion between scales of temperature, Temperature measuring instruments, types of thermometers, pyrometer and transmission of heat - Conduction, convection and radiation , Coefficient of linear expansion and related problems, Thermal conductivity and insulators , Boiling point and melting point of different metals and Nonmetals

Basic Electricity: Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC and their comparison, voltage, resistance and their units, Conductor, Insulator, types of connections- Series and Parallel, Ohm's Law, relation between VIR & related problems, Electrical power, energy and their units, calculation with assignments, Magnetic induction, self and mutual inductance and EMF generation, Electrical Power, HP, Energy and units of electrical energy

Centre of Gravity: Centre of gravity and its practical application

Algebra: Addition, Subtraction, Multiplication & Divisions, Algebra – Theory of indices, Algebraic formula, related problems

Elasticity: Elastic, plastic materials, stress, strain and their units and young's modulus, Ultimate stress and working stress

Heat Treatment: Heat treatment and advantages, Different heat treatment process – Hardening, Tempering, Annealing, Normalizing, Case Hardening

APPENDIX-V

FORM I	
Office of theMiscellaneo	ous Certificate Case Noof 20
'RESIDENT/NATIVITY CE This is to certify that Shri/ Smt/ Miss is a native of the District o	son/ daughter/wife of Shri
Odisha and he/his family ordinarily reside in Villag , Tahasil in the District of granted only for the purpose of WSCEE 2021	ge/TownP.S
	Signature of Revenue Officer Date:
Round Seal of the Office	Designation with Seal of office
Note : 1. Revenue Officer means the Chief Officer in charg Division of Tahasil and includes an Additional District Magis 2. No part of the form should be mutilated in any manner. In	trate and Additional Tahasildar.
FORM II	
'SC/ST CERTIFICATE BY	BIRTH' (See Rule-8(I))
This is to certify that Sri / Smt / Kumari	
Town	Tahasilhe State of Odisha belongs to the ognized as Scheduled Caste / Tribe under Constitution (Scheduled Tribes) Order, 1950 as Tribes (Amendment) Orders Act 1976.
Full Signature of the Applicant	Signature of Revenue Officer
Round Seal of Office	Designation with seal of the office

Note: This certificate should be issued by Tahasildar of the place of residence of parent in Odisha. No part of the form should be mutilated in any manner. In case of mutilation, the certificate is liable to be rejected.

Date

FORM III

CERTIFICATE OF EMPLOYMENT OF CANDIDATE'S PARENTS / SPOUSE

Employer-Government of Odisha / Government of India / Universities of Odisha / Govt. of India undertaking &Govt. of Odisha undertaking located in Odisha at the time of application.

1.	Name and address of Organization /Office in which employed :	Father/Mother/Husband/Wife
		(Delete whichever is not applicable)
2.	Name and designation of the certifying authority	
	(Employer/Head of Office/ Organization) :	
3.	a) Name in full and designation of employee to whom certificate is being issued.	
	b) Whether in permanent employment :	
	c) Present Place and State of Posting :	
	d) Permanent address as per service records :	
4.	Name of the candidate in full :	
5.	Relationship of the employee with the candidate :	
6.	Particulars of employment of the employee :	

Place Date of Joining Period of Service

Signature of Employee

Signature of Employer/ Head of Office/ Organisation

Date:

Designation (With Seal of Office)

Note: In case of the employee is on deputation either from Govt. of Odisha or Govt. of India, the above certificate should be signed by the Employer.

FORM IV

STUDENT UNDERTAKING

I,	Shri/	Smt/	Miss				son/	daughter/wife	of
Shri.			residing	in	Village/Town			P.S	,
Tahas	sil	i	n the Distr	ict o	f			. hereby declare that	I will
not join any other course while continuing my regular course at World Skill Center. In case I am									
found	d guilty I v	will be ter	minated						

Signature of the Parent/Guardian

Signature of the student Date:

ADDRESS FOR COMMUNICATION

WORLD SKILL CENTER

Tower 2010

Block- B, Sector- A, Mancheswar Industrial Estate,

Bhubaneswar, Odisha- 751007

Visit us: www.worldskillcenter.org/admissions

Email: admissions@worldskillcenter.org

Phone: 1800 266 6002

