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**TSST COURSE AUDIT FORM**

**This form is designed to allow community based panels of teachers to evaluate each other's course, facilitated by the Institute of Physics.**

**Courses which meet the required standard will be deemed to have received IOP-enabled community approval.**

**Evaluators will be primarily looking at consistency between course objectives/outcomes and mode of delivery. The audit form is designed to test the coherence of the course as described. Individual courses may vary in length and it is for individual participants to decide which advertised length suits their needs best.**

**However, based on community feedback, it was felt that it would be helpful to provide some guidance as to specific aspects. Most specific recommendations are given in the Notes columns. In addition it was felt that a TSST course securing IOP approval would normally be expected to take 30-50 hours to complete, excluding unmonitored independent learning time. Please note that a course submitted for auditing will not be penalised if it does not meet a stated guideline. However, the approval panel will expect to see some justification.**

**Institute of Physics will publish details of all community approved courses on the IOP website.**

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| **Name of lead school** | Taunton Teaching Alliance at Heathfield Community School, Taunton, Somerset (Lead School)In collaboration with The Blue School, Wells, Somerset (Training delivery) |
| **Lead contact** | Tony BloxhamDirector of Taunton Teaching Alliance Email: tbloxham@heathfieldcommunityschool.co.ukMr Andrew ShawSpecialist Physics Tutor at The Blue School |
| **Date submitted** | September 2018  |

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| **Course summary** | **Notes** |
| **Teacher Subject Specialism Training (TSST)**To prepare non-specialist teachers to teach physics to KS3 and KS4 students. The course is designed to meet delegates’ needs through 3 strands: the key physics areas that pupils find hard to understand, the areas teachers find more challenging to deliver and, finally, common misconceptions.Throughout the course participants will secure their subject knowledge in physics by working on their individual areas of strength and areas for development; recording their progress using a Personal Learning Log.The taught elements of the course will comprise of face-to-face training for a total of 3½ days (2 full days, 3 half days) and a twilight final presentation.Successful completion will be evidenced by termly: * observation by an in-house or visiting specialist
* work scrutiny to evidence student progress in an identified class (participants will keep a personal record of student progress evidenced by copies of student work)
* data analysis of identified class (ongoing assessment data will be analysed by the participants ensuring pupil progress)
* review of delegate’s lesson evaluations
* a minimum of two training sessions
 | Short description of the course (e.g. objectives and expected outcomes)  |

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|   | **Subject area (indicate number of hours)** |
| **Mode of delivery** | Energy | Motion & Forces | Waves | Electricity & electromagnetism | Matter & Space | Other, if any, specified below: Radioactivity  |
| Face to Face (Presentations, lectures, guided group tutorial work with tutor present) |  2 |  2 |  2 | 2  |  2 |   2 |
| Practical (Hands on use of apparatus working individually or small groups. Observation of demonstrations is not deemed to be practical work) |  1 | 1  | 1  | 1  | 1  | 1   |
| Coaching/ Mentoring (One to one or small group sessions involving coaching, mentoring or allied techniques led by an experienced practitioner.) |  1 | 1  | 1  | 1  | 1  | 1   |
| Monitored independent learning (e.g. online tutorial work)Follow up tasks from each session are set and reviewed by the trainer | 1 | 1  | 1 | 1  | 1 | 1  |
| Other modes (please specify below)Reading material is provided in advance of each session | [2]  | [2]  | [2]  | [2]  | [2]  | [2]  |
| **Total hours = 30** | 5 | 5 | 5 | 5 | 5 | 5 |

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| **Please provide further *brief* detail on the following aspects of the course** | **Notes** |
| **Practical Work** | Specify what nature is – e.g. embedded in related session/standalone/skills focussed, work in pairs/groups. Also include Health and Safety measures in place.  |
| Practical work is carried out for reinforcement of the topics taught and is therefore embedded within each session. Training sessions comprise of 50% demonstrations and 50% hands-on experience for the participants. A further session is run focussing entirely on the 12 GCSE Core Practicals. Examples of practicals that will be covered include:* how different coloured objects appear under different light sources
* proving the relationship between current and voltage in series/ parallel circuits
* calculating wave speed on a string
* deriving absolute zero in classroom environment
* calculating the efficiency of a motor

Each training session makes explicit reference to Health and Safety considerations. Each practical will have key health and safety issues highlighted with practical solutions, which illustrate good practice. An exception is radiation where sources are demonstrated only and participants need to manage their own radiation training. |
| **Subject knowledge** | Please give more details on methodology of subject knowledge (e.g. lecture, practice questions, peer tutorial, diagnostic testing) |
| The content will be delivered through a combination of lectures, seminars and practical sessions. The aim is to ensure there is sufficient pace, variety and challenge to help all participants to develop their pedagogic understanding. Individuals will be taught specific strategies to assess student understanding (e.g. named questions, think-pair-share, solo taxonomy etc.). The planning of each session will be influenced by the needs identified through the initial audit and feedback forms. Practical elements are demonstrated by the course leader to reinforce the key learning objectives. These activities are carefully selected to model the variety of physics’ practicals that exist. Participants will have an opportunity to carry out these practicals and reflect on their teaching approach.Pre-session reading (think pieces) will be shared electronically prior to each session. The electronically shared reading will provide the structure and resources for learning and form the 6 distinct sections of a virtual participant handbook. In addition, there will be an element of personalisation where individual colleagues receive targeted feedback to inform their practice. Alongside the content, there will be a focus on the language of science - a key recommendation in the Education Endowment Fund (EEF) report.  |
| **Pedagogical Content Knowledge** | Give further details on methodology used (e.g. pupils, misconceptions/naïve conceptions) |
| Lectures are followed by discussion of the common misconceptions of pupils. Common misconception include, as examples, knowing why a voltmeter needs to be connected in parallel, or weighing an object in kilograms when it is actually a force.This is then followed by a practical element, allowing hands on problem solving and enabling participants to appreciate the difficulties that students will encounter. |
| **Research Informed Practice** | How do you propose to embed the results of research informed best practice (e.g. access to research articles)  |
| The Blue School is a ‘Research School’ with access to latest research conducted by the EEF and IEE. This informs our practice as a school and is incorporated in all aspects of this course. This will include explicit reference to the EEF’s guidance report on improving secondary science and the 7 recommendations.In the first session, Assistant Headteacher (Research School lead) will deliver a seminar on evidence-based practice. All participants will set themselves an inquiry question to research during the last term of the course, which they will summarise their findings in the ‘Final Presentation’. |
| **Handling of Mathematical Requirements** | e.g. handling of graphical techniques, proportionality, errors |
| It is recognised that there is not enough time within the course to cover all mathematical content for the participants - so there is always a focus on the principles behind planning a series of lessons that will support the progress of all students.Having said this, the school offers TSST training for Maths teachers and individuals have also in the past followed this course with further training in Maths. Our Maths team have also offered support to colleagues when required. |
| **Participant Assessment Arrangements** | Use of various modes e.g. lesson observation, portfolio, diagnostic testing, etc.  |
| Assessment is an on-going and integral part of the course for participants. The following provides an overview of the various assessments used:* Self-Audit and Baseline test carried out at the start of the course
* Lessons observations
* Participants Learning Logs and Portfolio of evidence
* Work scrutiny of targeted class
* Student assessment data
* End of course (re-administered baseline assessment) for progression measure
* Group presentation of key development areas with significant improvement
* Personal inquiry question findings
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| **Quality Assurance Mechanisms** | Mention use of any form of quality assurance – use of validated material, external validation or accreditation. Please include qualifications of staff.  |
| **I**dentical Baseline Test is carried out at the beginning and end of the course – to accurately quantify any improvement.The subject lead, who is Head of Physics, has delivered 3 years of TSST training; has 15 years of physics teaching experience, including GCSE and A Level; and has previously worked in industry for 10 years.The resources used are selected from those provided by the exam board and other TSST resources from IoP.As a research school, all aspects of the course will be influenced by evidence-based practice. |
| **Individualisation for Participants** | Mention any separate routes possible, and how those routes are decided. |
| Following the training, participants are encouraged to focus on, and read around, areas where the Baseline Test showed that their knowledge had gaps. Later elements of the course are modified to suit the needs of the participants.The ‘think pieces’ distributed prior to each session may identify additional gaps in knowledge, which will be addressed through seminar work. |
| **Course Evaluation Mechanism** | Mention evaluation by participants, or external body, if you intend to publish survey results etc.  |
| An audit of subject knowledge at the start of the first day of the program will provide a baseline measure. An identical activity is completed during the final training session to enable us to measure the improvement in the participant’s knowledge. Feedback completed at the end of each day of the training leads to modifications to the future training events. In the first session Assistant Headteacher (research school lead) will deliver a seminar on evidence-based practice. The reflective nature of this will help to ensure honest, evaluative comments are evident throughout the process. |
| **Lifelong Learning of Participants** | The TSST courses are inevitably of limited duration. Explain how participants are enabled to acquire the skills for autonomous learning beyond the course itself.  |
| Within the course there is always a focus on the principles behind the physics studied so that participants can plan and apply their knowledge to other areas that are not specifically covered during the course.In addition to the essential content, participants will be provided with a range of stimuli which will make them reflect on the ‘why’ behind their teaching. Essentially, individuals will be asked to think beyond Physics in the classroom. Think pieces will be designed to help them extend their learning in the widest sense.The course encourages networking and remote sharing of ideas and resources using ‘onedrive’.Participants are encouraged to join IoP. |

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