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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** | Barr Beacon School |
| **Lead contact** | Mr S Foster |
| **Date submitted** | 14th September 2018 |

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| **Course summary** | **Notes** |
| **Aims:**  Our TSST Physics course aims to improve both the subject knowledge, teaching and practical skills of Physics participants. Our delivery includes face to face twilight sessions that meet our aims through discussion, reflections on monitored learning tasks set in prior sessions and linked to subject knowledge development. There is an emphasis on demonstrating practical activities and how to conduct these safely with alternatives demonstrated for participants whose school departments lack the same resources. This will also enhance subject knowledge and common misconceptions. Each participant is observed teaching Physics lessons including a practical, to guide them further in their future pedagogical development. The participants are free to observe specialists teach Physics at any point during the programme and indeed when it has finished to continue their development. Resources will also be shared on request even after the course has been completed.  **Expected outcomes:**  The quality of participant’s knowledge and quality of pedagogical delivery will improve due to the focus on practical delivery, subject knowledge tests and general personalised support. It is expected that programme evaluations will demonstrate an increased confidence and knowledge of the participants and a high quality experience of the programme overall. | 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:  **Required student practicals** | | Face to Face (Presentations, lectures, guided group tutorial work with tutor present) | 2 | 3 | 2 | 4 | 3 | 1 | | Practical (Hands on use of apparatus working individually or small groups. Observation of demonstrations is not deemed to be practical work) | 2 | 2 | 2 | 2 | 2 | 3 | | Coaching/ Mentoring (One to one or small group sessions involving coaching, mentoring or allied techniques led by an experienced practitioner.)  **Provided on demand & as necessary** | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | | Monitored independent learning (e.g. online tutorial work) | 1 | 2 | 1 | 2 | 1 | 1 | | Other modes (please specify below)  **Lesson Observations and feedback – 1.5 hours per participant** |  |  |  |  |  |  | | **Total hours** | 5.5 | 7.5 | 5.5 | 8.5 | 6.5 | 5.5 |  |  |  | | --- | --- | | **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. | | * Embedded in related subject session& linked to monitored independent tasks set prior to session. * Working individually or in pairs for peer-support * Health and safety issues will be addressed in each practical session and embedded within topic sessions when practical work is being discussed. * All practical work is risk assessed in the same way as it would be for classroom use, and this is made explicit to participants. | | **Subject knowledge** | Please give more details on methodology of subject knowledge (e.g. lecture, practice questions, peer tutorial, diagnostic testing) | | * Pre-reading tasks set for sessions to identify teacher misconceptions and share experience * Use of IOP diagnostic testing periodically retaken to demonstrate subject knowledge progression * Use of past exam questions to assess teacher confidence * Lecture on subject knowledge and discussion of best approaches to teaching it. * Example questions “how might this look in an exam” discussion and experienced examiner point of view shared | | **Pedagogical Content Knowledge** | Give further details on methodology used (e.g. pupils, misconceptions/naïve conceptions) | | * Pupil misconceptions used and common misuse of science vocabulary at the beginning of each session, leading to discussion of content and teaching methods to address misconceptions and minimise the risk of introducing/reinforcing errors in scientific language use. | | **Research Informed Practice** | How do you propose to embed the results of research informed best practice (e.g. access to research articles) | | * Links sent to participants in pre-session task instructions * Use of IOP approved resources * Key research that informs sessions is referenced in slides | | **Handling of Mathematical Requirements** | e.g. handling of graphical techniques, proportionality, errors | | * Embedded into the exam skills parts of each topic session, and on student practical work. * Graph skills and proportionality highlighted in practical work – processing results and spotting trends * Algebraic techniques delivered through examples and practise embedded within subject content and pre-session tasks | | **Participant Assessment Arrangements** | Use of various modes e.g. lesson observation, portfolio, diagnostic testing, etc. | | * Participants are observed teaching Physics in their own school setting or at Barr Beacon to receive developmental feedback * Participants carry out IOP TSST diagnostic testing at regular intervals to map subject knowledge progression * Questioning in sessions and participant contributions used to ascertain understanding and progress, sessions adapted accordingly. * Participant evaluations inform development of the course to their needs. | | **Quality Assurance Mechanisms** | Mention use of any form of quality assurance – use of validated material, external validation or accreditation. Please include qualifications of staff. | | * Use of TSST resources from IoP found at <http://www.iop.org/education/ltp/established/tsst-classroom-resources/index.html> * Use of School Physics website and CD-ROM resources <http://www.schoolphysics.co.uk/> * Use of “The New Resourceful Physics Teacher”, Keith Gibbs, School Physics Publishing, Somerset (2011) * Use of IoP resources from Supporting Physics Teaching <http://www.iop.org/education/teacher/support/spt/page_41531.html> * Use of in-house SCITT library of resources used with Trainee Physics teachers and ‘Researchers in Schools’ participants * Staff qualifications:   + Dr A Cook – B.Sc. Physics Hons 2i (University of Dundee 1990); Ph.D. “Some Applications of Micro beam Analysis in Materials Characterisation” (University of Dundee 1994); PGCE Secondary Physics & Mathematics (University of Strathclyde 1998). Current post – Lead Practitioner in Physics at Barr Beacon School. | | **Individualisation for Participants** | Mention any separate routes possible, and how those routes are decided. | | * Participants who have very little/no prior physics experience receive small group intervention within sessions * Participants with limited knowledge of physics equipment in their own schools may receive a visit from an experienced physics teacher to support them with learning to use what equipment they already have and might not know about. * Participants provided with a bank of resources and reference text to support their own knowledge and teaching of Physics. | | **Course Evaluation Mechanism** | Mention evaluation by participants, or external body, if you intend to publish survey results etc. | | Participants evaluate the course twice. Once whilst it is underway and again at its completion. The feedback is shared with the lead facilitator who adapts practice as appropriate, A member of the lead school’s leadership body will observe sessions periodically using our in-house evaluation to feedback to the Lead Facilitator on the overall session quality and developmental areas. | | **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. | | Participants have an open invitation to continue their contact with the TSST Lead Facilitator Dr Allison Cook to seek guided observations, resources and general advice about Physics teaching and knowledge. Participants collate a bank of resources and materials throughout the course to add to their ‘toolkit’. This includes recommended texts, websites and where to locate banks of resources. | |  |  |  |  |  |  |  |  |